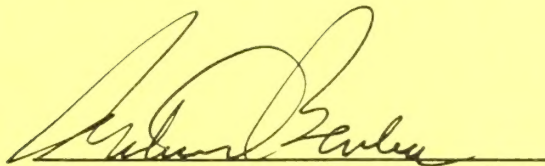


Digitized by the Internet Archive
in 2013

SUPERINTENDENT'S ANNUAL REPORT

1992



Robert D. Barbee, Superintendent

YELLOWSTONE
NATIONAL PARK
LIBRARY

93-40

TABLE OF CONTENTS

<u>DIVISION OR BRANCH</u>	<u>PAGE</u>
Administration	1
Concessions	4
Interpretation	9
Maintenance	18
Planning	30
Public Affairs	33
Resource Mangement and Visitor Protection	41
Research	54
Superintendent's Chapel Committee	55

ADMINISTRATION

Yellowstone's Administrative Officer of nine years, Tom Swan, retired on May 30, 1992. Marcia Blaszk of Shenandoah National Park was chosen as the new Administrative Officer and arrived in the park in early August only to be whisked away as a member of the All-Risk Management team assisting with Hurricane Andrew relief efforts.

Information Systems Management (formally Telecommunications/ADP)

Telephone Service

This past year, significant changes and improvements have occurred in the park's telephone service situation. U S WEST has completed nearly all of the \$8,000,000 project to upgrade the equipment and transmission facilities serving the park. They have also significantly improved their repair service and cooperation. These changes were, in part, the result of our complaint to the Wyoming PSC and TWRS contracting for Centron Service from U S WEST as well as U S West's desire to upgrade these facilities and services.

The old telephone system, formally shared by NPS and TWRS, was dismantled at the end of the summer visitor season. TWRS is using Centron service at Mammoth for the winter operation, and NPS has implemented the first phase of a new telephone system, designed to meet their exclusive requirements, by upgrading and relocating some of the equipment from the old system (i.e., an ATT-IS System 75 PBX).

The second and final phase of the new government system will be implemented in FY 93. The new system, when complete, will provide significantly improved service and reliability and will save about \$5,000 per month.

Alarm and Security Systems

The park-wide alarm system continues to grow. Many TWRS buildings and some additional NPS buildings have been added to the system this past year. We now have the capability to control, monitor, and reprogram many of these systems remotely from Mammoth.

Automatic Data Processing

Our use of computers and automated systems continues to grow. Several dozen new personal computer systems were added to the inventory last year. The use of computer networks and electronic mail has increased significantly. The park's centralized Datapoint system is now primarily used to support budget planning and tracking functions. Personal computers are now used for nearly all other functions. User training and support are rapidly becoming an important part of the ADP workload. This past year, the ADP staff provided considerable training including classes in DOS, word processing, and database use.

Fiscal

The following are the money figures for the 1992 Superintendent's Annual Report:

ONPS Base Funding	\$14,640,000
Fee Money	2,668,000
Special Funding	2,282,600
School Funding	930,000

The special funding includes money received for public health, VIPs, drug money, air quality, cyclic, repair/rehab, Wolf EIS, Fire Recovery, etc.

Personnel

The Office of Personnel Management evaluated the staffing program in July. The evaluation team noted that significant improvements have been made since the last OPM evaluation which occurred in April of 1990.

All grievances and employee complaints were resolved locally. No complaints went to a formal stage.

A Labor/Management council was established, and the council now meets on a regular basis to discuss issues of mutual interest.

A total of nine Yellowstone employees retired during 1992.

A total of 64 vacancy announcements were issued for temporary and permanent positions.

Vanessa Ford was selected to be the park's Staffing Specialist and began work in November.

Procurement

Over 4,000 requisitions were processed totaling approximately \$5.2 million as follows: 40 contract actions reported on SF-279s with 16 new awards (\$1.5 million); Lake Housing contract (\$855,000); 8 supply contracts, 6 construction and 2 service contracts including a 5 year contract for Armored Car Services for the fee collection operation; 2 emergency contracts - Baghouse (air scrubber) for asphalt plant located at Norris to obtain the required air quality permit from the State of Wyoming, Department of Environmental Quality and emergency capping of Geothermal well at Biscuit Basin.

1,650 purchase orders issued for \$3 million.

2,200 third party drafts issued for \$500,000.

200 FEDSTRIP orders for \$200,000.

All special emphasis (small, minority and women-owned businesses) procurement program goals were met or exceeded.

Supply Center Activities

Total Sales - \$1,060,000. The annual physical inventory of the Supply Center reflected a loss of \$13,717.78 or 1.29% of total sales, well within the 5% variance allowance.

Property Management Functions

	<u>NPS</u>	<u>TWRS</u>
Reports of Survey	134	82
Report of Excess Property	8	0
Report of Excess Property for Sale	10	18
Transfer of Property	12	0

Annual quarters rates (CPI adjustments) were implemented in February.

Physical inventory of capitalized property was conducted over the summer.

Current Property Status

	Number of Items	Value
NPS	8,862	\$16,633,873
TWRS	2,986	5,250,920

CONCESSIONS MANAGEMENT

Contracts and Permits

TW Recreational Services (TWRS), Incorporated

The contract between the National Park Service and TW Recreational Services (TWRS), Incorporated expired on October 31, 1991. A prospectus was issued and TWRS was selected to continue to operate food service, overnight accommodations, marina/boat operations, horseback rides, transportation services, gift shops, public showers, and laundries within Yellowstone.

The previous contract with TWRS required an annual investment of 22% of their previous year's gross revenue into a Capital Improvement and Maintenance Program. This contract resulted in approximately \$70 million (over the 10 year contract period) being invested into improving facilities owned by the United States and assigned to TWRS in the park.

The new contract will expire on October 31, 2001. This contract requires TWRS to undertake and complete a construction and renovation program costing not less than \$8 million, to invest

10 percent of their gross receipts into a Construction and Improvement Program, and an additional 10 percent into a Cyclic Maintenance Program. This contract will result in over \$80 million being invested in government-owned facilities assigned by contract to TWRS over the next 10 years.

Major projects under this contract that are complete or will be completed in 1991 through 1993 include renovation of guest rooms, public areas, and corridors in the Old Faithful Inn east wing, construction of an employee pub and recreation center at Old Faithful, construction of a transportation/maintenance facility at Old Faithful, renovation of a day care facility at Mammoth, construction of a new barn at Canyon, and renovation of guest rooms and public spaces in the Old Faithful Inn west wing. This contract will also result in renovation of the Mammoth Hotel, replacement and renovation of guest and employee cabins at Roosevelt Lodge, construction of a new Snow Lodge, and further upgrading of employee and guest accommodations parkwide.

In addition to cyclic maintenance of TWRS facilities, a historic preservation crew has been funded to provide the skills necessary to maintain and restore historic facilities in the park.

Hamilton Stores, Incorporated (HSI)

During franchise fee renegotiations in 1991, the following was agreed to: 1) replace the Memorandum of Understanding signed in 1973 requiring a 12.25 percent building use fee for the Bridge Bay Store with a contract amendment which requires the concessioner to pay a fee for the use of any assigned structures based on the value of the government-owned structure;

and 2) to obligate not less than one-half of one percent of the prior year's annual gross receipts towards the maintenance of grounds and government improvements. Approximately \$100,000 annually will be available for this program.

Since 1991, HSI has begun a parkwide sign improvement program, remodeled the interior of the Mammoth General Store, constructed or are in the process of constructing handicapped access at the Mammoth General Store, Old Faithful Upper Store, and Old Faithful Photo Shop. HSI has also submitted plans to improve facilities within their land assignment at Canyon General Store including drainage, landscaping, and walkways; constructed or remodeled public and employee restroom facilities at several locations; and completed a warehouse expansion project at West Yellowstone.

HSI moved their winter headquarters from Santa Barbara, California, to Bozeman, Montana, in 1992.

Yellowstone Park Services Stations

In 1991, the Joint Venture Agreement between TWRS and HSI was extended through October 31, 1996.

HSI has submitted a proposal to become sole operator of the service stations and, as such, would provide approximately \$2.5 million toward an improvement and construction program for the service stations, equipment, and related facilities. This would improve visitor service, would convert the existing full service stations into mini-serve, and would lower the price of gasoline by approximately ten cents per gallon. The convenience store concept is also being reviewed. A new station would be built at Old Faithful to replace the existing two stations, and a new station would be constructed in the Lake area to replace the station that was closed in 1990.

Handicapped accessibility is being addressed this year at several stations along with restroom renovation and improvement.

West Park Hospital

The contract between the National Park Service and West Park Hospital expired on October 31, 1992. A prospectus was issued on July 22, 1992 and we received three proposals in response. The best proposal was received from St. John's Hospital, Jackson, Wyoming; however, as the existing satisfactory operator, West Park Hospital exercised their right to meet the terms of the better offer. Therefore, a contract was negotiated with West Park Hospital. The contract will be signed by the concessioner in March 1993 and will be sent to Washington for Congressional review and approval for the required 60 days and then signed by the Regional Director. The new contract will result in over \$1 million in new facilities, equipment, and services including a new clinic at Old Faithful, two new ambulances, two emergency services vehicles, new employee housing at Old Faithful and Lake, new x-ray

equipment at Lake Hospital, and an improved helipad.

The year-round physician at the Mammoth Clinic moved in 1991. Since that time, Dr. Pamela Farmer has joined the clinic staff. The United States Public Health Service funds this position.

Snowcoach Permits

In December 1991, five limited concessions permits (LCPs) were executed authorizing snowcoach operations in the park for a two year period. The permits were issued for only two years to enable the park service to study use, impacts on resources, etc. Prior to this permitting action, snowmobiles and snowcoaches were authorized under commercial use licenses (CULs). The availability of conversion kits to place tracks on vans and other vehicles at a fraction of the cost of purchasing existing snowcoach equipment expedited the need to issue a prospectus limiting the number of operators.

These permits expire on March 31, 1993; however, an extension was issued in December 1992 to enable further review. A prospectus for renewal of these permits will be issued this spring.

Snowmobile Permits

Currently, seven operators are authorized under CULs to provide guided snowmobile tours in Yellowstone. Eleven LCPs are issued out of Grand Teton National Park for snowmobiling in Yellowstone.

Yellowstone's winter use has reached a level of significant concern due to the heavy snowmobile traffic. The majority of the machines enter the park from West Yellowstone as unguided rental equipment; therefore, the Park Service has no authority to place them under permits which would enable us to limit the number of operators.

Yellowstone's guided snowmobile operators currently authorized under CULs will be converted to LCPs this spring. Grand Teton and Yellowstone will be coordinating this effort to ensure continuity.

Bicycle Tours

Five bicycle tour operators currently hold CULs authorizing them to provide guided tours of the park. A prospectus will be issued this spring converting the licenses to LCPs. This will place limits on the number of operators authorized to conduct operations in Yellowstone.

Concession Operated Campgrounds

TWRS is authorized to provide overnight lodging, a recreational vehicle park and campers' services. Therefore, a contract amendment for TWRS has been drafted which would authorize them to operate four of Yellowstone's major campgrounds. TWRS will be authorized to operate Madison, Grant Village, Bridge Bay, and Canyon campgrounds. These campgrounds have approximately 1,400 sites.

The contract amendment will result in TWRS collecting campground fees and investing 20 percent of the gross receipts from the campgrounds into a construction and improvement program for campground improvements and related equipment. TWRS will also be required to invest an additional 10 percent of gross receipts from campground revenue into a Cyclic Maintenance Program for improvements and maintenance of the campgrounds. TWRS has agreed to provide initial capital of \$400,000 for construction projects relative to campground operations.

The amendment is for five years with Secretarial authority to extend the amendment through the term of the TWRS contract.

National Park Service personnel will still be required to provide interpretive services and ranger patrol for visitor safety and resource protection.

A significant savings in National Park Service operating costs will be realized from this contract amendment enabling Park Service maintenance money and manpower to be invested in other significant projects in the park.

Concession Operational Statistics

TWRS

TWRS served 1,792,304 meals to park visitors during the 1992 summer season.

723,573 guests stayed overnight in TWRS facilities during the 1992 summer season and 31,844 overnight guests during the winter season.

HSI

Hamilton Stores business increased by 7.26% from 1991 to 1992.

Yellowstone Park Medical Services

Mammoth Clinic:	631 visitor visits
	1,096 seasonal employee visits
	<u>3,706</u> resident visits
	5,433 total visits
Old Faithful Clinic:	788 visitor visits
	<u>1,441</u> seasonal employee visits
	2,229 total visits
Lake Hospital:	1,981 visitor visits
	<u>1,769</u> seasonal employee visits
	3,750 total visits
	38 visitor in-patient days
	13 seasonal employee in-patient days

Yellowstone Park Service Stations

YPSS sold 2,460,908 gallons of gasoline in 1992, compared to 2,369,274 gallons in 1991.

Concessions Evaluations Program

All concessioners in Yellowstone received annual overall ratings of satisfactory.

Visitors received exceptional services in the park from all concessioners. All deficiencies were corrected in a timely manner or were placed on an abatement plan for correction at a later date.

Concessioner Facilities, Services, and Rates

Concessioners in Yellowstone offer a wide variety of services and rates.

TWRS is required by contract to provide at least 20 percent of their overnight accommodations as low cost. Lodging in the park during the 1992 season ranged from \$18 to \$97 for two people. All areas offered a variety of food service including fast food operations, cafeteria style and hotel dining. This provides not only a variety of food service but a wide range of prices.

INTERPRETATION

Budget

The ONPS base for Interpretation in FY 92 was \$852,400 or 4.88 percent of the total park ONPS budget. The ONPS base fell far short of covering program costs but with lapses (Chief's, South District Naturalist's, Old Faithful Subdistrict Naturalist's, and Environmental Education Specialist's positions), and with allotments of donated and "soft" money (\$10,000 from the Chip Davis Fire Recovery Concert Fund for seasonals at Grant Village and \$7,000 in Federal Highways funds through the Midwest Archeological Center (MWAC) to provide interpretive services on a dig at Fishing Bridge), all traditional facilities and programs operated at minimal levels. In addition to these funds, we received \$17,000 in Cultural Resources funds for backlog cataloging, \$4,000 for wayside exhibits, and a \$2,100 donation for the Archives.

The Yellowstone Association (YA) once again provided major support of interpretive services in the park. In addition to their usual \$30,000 contribution to the Division of Interpretation (Aid to NPS), YA funded \$82,500 of special interpretive projects including historic photo preservation, library automation, Artists-in-Residence, the Canyon Children's Geology Exhibit, the Performing Arts Series, and a supplement of interpretive programs in the summer "Yellowstone Today" newspaper. YA continued their support of the Research Library, paying salaries for two part-time librarians and purchasing materials and magazine subscriptions. The Association also continued to distribute trail guides and "Discover Yellowstone", and assisted with handling funds for the newly implemented Junior Ranger program. Perhaps YA's greatest contribution, once again, was the invaluable help of book sales assistants working the park visitor centers.

Personnel

Many significant personnel changes took place in the Division during FY 92. The GS-11 South District Naturalist and GS-09 Environmental Education (EE) Specialist positions--both vacated during FY 91--were not permanently filled in order to save money. The South District job was completely lapsed and EE was directed by Roy Wood on a one year seasonal GS-07 appointment. When Roy took a permanent job with the U.S. Forest Service in June, the position was lapsed until fall when George Wilkes and later Rich Jehle were selected to fill in.

Chief Naturalist George Robinson was on extended sick leave in early 1992 and retired in mid-April. From February to July, Assistant Chief Ranger Steve Frye was our Acting Chief, followed by Rocky Mountain Regional Curator Laura Joss. Regional Chief of Interpretation Ron Thoman transferred to the position at the end of November. Other changes included the resignation in September 1991 of Administrative Assistant Pat Chansley. Pat was replaced by Lindsay Robb who joined the staff in November of that year. Mammoth Sub-District Naturalist Dave Price transferred to Resource Management & Visitor

Protection in February 1992 to work on the bison issue. Steve Eide was promoted from GS-05 interpreter to Dave's GS-07 position. Historian Tom Tankersley and Interpretive Specialist Linda Young were promoted to GS-11s as the result of position reclassifications. Curator Beth Blacker resigned to move to Glacier National Park when her husband Steve Frye accepted the Chief Ranger position there. Beth was succeeded by Cyd Martin in a reclassified GS-05/07/09 Curator position. Old Faithful Sub-District Naturalist Dan Ng transferred to become Assistant Chief Naturalist at Bryce Canyon in late May. Dan's position was left vacant, and an extra seasonal was hired for the summer.

A realignment of field supervisory duties put West District Naturalist Joe Halladay in charge of a South District consisting of Old Faithful, Grant, and Fishing Bridge while North District Naturalist Greg Kroll took on Canyon in addition to Norris, Mammoth, and Tower. Permanent GS-07 staff included Writer/Editor Ginny Cowan, Artist/Illustrator Dave Cowan, Photo Archivist Jim Peaco, and Sub-District Naturalists Jeannine Wagner (Canyon), Carol Shively (Fishing Bridge), Roger Anderson (Grant), and Sandy Snell-Dobert (Norris).

We also had Clerk/Typist Helene Greninger in the Chief's office on a one year seasonal appointment. In addition to the 16 permanent and 2 temporary (one year) positions mentioned above, the Division was staffed by 31 seasonal employees during the summer and six during the winter.

VIP Program

The Volunteer Program Coordinator duties continued to rest with the Administrative Assistant position in FY 92. It proved to be a banner year marked by increased reporting of volunteer hours in all divisions. A total of 420 VIPs contributed nearly 43,000 hours of service. If the park had paid GS-05 wages for these services, the program provided over \$380,000 in support for our operation. Of the 420 volunteers, 61 were youth, 293 adults, and 66 senior citizens. Hours contributed by activity were:

Administration	1,815
Campground Hosts	12,133
Curatorial Services	267
Interpretation	4,643
Maintenance	3,165
Visitor Protection	376
Resource Management	4,796
Research	15,465

The VIP program budget for FY 93 was \$8,400 and was used to reimburse VIPs for their out-of-pocket expenses (\$6,600) and to purchase uniforms (\$1,800).

Environmental Education

In 1992, *Expedition: Yellowstone!* had three different Field Coordinators. Roy Wood acted as Coordinator until early August and worked with the Mammoth staff during the summer. Rich Jehle took over as Acting Coordinator in mid-August until George Wilkes filled the position. George vacated the position in mid-October at which time Rich resumed the position.

Expedition: Yellowstone! had two seasons; spring (April-May) and fall (September-October). In spring, the program had three seasonal employees. In fall, there were three seasonals and two volunteers. During 1992, about 825 students and teachers participated in the program. The visits of 28 schools were organized, planned, and coordinated through this program. Most of the participating schools were from Wyoming, Montana, Idaho, and Utah. Other participating schools came from Ohio, Mississippi, and Florida.

Yellowstone National Park's Junior Ranger program was completed and implemented in the park during the summer of 1992. The program consisted of an activity paper, which sold in visitor centers for \$1, with a patch awarded to the children who successfully completed the activities as prescribed in the newspaper. The program was targeted for children ages 5-12. Costs for printing the paper and production of the patches were paid by YA. The Junior Ranger Program proved to be very, very popular with park visitors.

BRANCH OF INTERPRETIVE PLANNING, MEDIA, SPECIAL PROJECTS

Continuing a theme of the past several years, Branch functions and operations evolved in 1992. A tremendous amount of work was accomplished by the Branch's relatively tiny (four person) staff. However, more than ever, it is obvious that additional resources (primarily staff) must be available if we are to meet basic needs plus produce world class interpretive services to Yellowstone's visitors and others interested in the park.

Media/Special Projects and Visitor Use

Interpretive media are vital means of providing information, orientation, and interpretation to visitors as well as outreach services to the general public and special groups. The following statistics document visitor use of various media during 1992:

Park Newspapers distributed annually - 900,000
Winter Snowmobile Guide - 21,000
Yellowstone Guide - 35,000
Trail Guide - 910,000
Discover Yellowstone - 23,700
Dayhike Sampler - 12,000
Site Bulletins - 177,750
Junior Ranger activity publication - 7,200
Exhibits in Museums/VCS - 1,914,168
Wayside Exhibits - 3,100,000

Photographic Services - 1,238

Artists-in-Residence & Performing Artists - 11,972

Planning

The annual Statement for Interpretation and the Annual Interpretive Program Report were prepared for 1992. Projects were submitted to Rocky Mountain Region's Exhibit Repair/Rehab Program; Norris Geyser Basin Museum was selected for a complete overhaul of its exhibits. The Interpretive Prospectus was reviewed and evaluated and proposals presented to undertake a major revision of it in 1993. We also contributed information to the development of the Backcountry Management Plan and Cultural Resources Management Plan.

Publications

Completed publications included four issues of the park newspaper, *Yellowstone Today*, development and production of a new four page supplement to the summer newspaper highlighting interpretive services and featuring a page of information about Grand Teton National Park, an extensive revision of the park's information mail out newspaper, *Yellowstone Guide*, a revision of the winter snowmobile guide, revisions of six self-guiding trail leaflets (Upper Geyser Basin Trail, Fountain Paint Pot Nature Trail, Mud Volcano Trail, Canyon Area Guide, Norris Geyser Basin Trail Guide, Mammoth Hot Springs Guide), development and production of a parkwide Dayhike Sampler, and 13 site bulletins on a variety of natural history, human history, and resource protection/visitor safety topics.

In various stages of development were trail guide leaflets for four self-guiding fire auto/nature trails, a tear-off map of Yellowstone National Park with the Greater Yellowstone Area on the back side (will replace the old Yellowstone-Grand Teton tear off map), area hiking guides, additional site bulletins, and a foreign language translation of the park folder. Completion of many of these projects awaits a determination of priorities and strategic planning to begin in detail in 1993.

Exhibits

Wayside exhibit planning, design, and production continued in various phases with respect to the Parkwide Wayside Exhibit Plan. North District wayside exhibits were installed by maintenance crews throughout the spring and summer. Waysides in the South/West District package underwent final production level graphics searches and map compilations; by year's end, the entire plan was in production. Winter wayside exhibits also moved into production when graphics searches and map compilations were completed. Planning for the Trailhead Wayside exhibit package began in conjunction with the Ranger Division's development of a new Backcountry Management Plan. A set of proposals was circulated to ranger personnel,

comments compiled, and a comprehensive list of sites developed in consultation with Assistant Chief Ranger Steve Frye and Management Biologist Sue Consolo Murphy. Finally, a fifth wayside exhibit package including geyser prediction trailside exhibits, resource management "generic" exhibits, and area orientation/interpretive exhibits for the major self-guiding nature trails, was prepared for Harpers Ferry Center's (HFC) consideration. We hope to add this package to the existing parkwide plan rather than pursue it as a separate major rehab package; the fate of the proposal should be resolved in 1993.

Design Yellowstone, also known as the Tri-State Design Competition, moved through stages of development, production, and installation at Canyon Visitor Center. Students and teachers from the three participating schools (located in Shelly, Idaho, Helena, Montana, and Cody, Wyoming) visited the park, returned to the classroom to develop exhibits, and worked with coordinator Dave Cowan to deliver exhibits to the park and install them at Canyon. Exhibits were available to the public for approximately one month before the visitor center closed for the season and will be retained at Canyon through the 1993 season. After that, major renovation of the facility and long term exhibit development will likely close exhibit areas until new media are installed.

Planning for a major rehabilitation of Canyon Visitor Center interpretive media (in conjunction with building and utility renovations) began with a visit by HFC planning and design team. Conceptual possibilities were presented at a meeting with the Assistant Superintendent and Chief of Maintenance. Detailed planning is scheduled to begin in 1993.

The first full season of visitor use at the Museum of the National Park Ranger revealed the "bugs" in the exhibits and media and provided solid information about visitor use patterns plus considerations for refining interpretive themes. Media needs were documented and submitted to Harpers Ferry Center. HFC contract managers there will determine if the exhibit contractor is obligated to address these deficiencies and how to proceed if not. HFC's AV Division continued to work on the audiovisual program for the museum with a goal of delivering it by the start of the 1993 summer season.

Photograph/Audiovisual Projects

Demand for a full spectrum of photographic services continued to overwhelm the park photographer. Negatives from the park's Historic Photograph Collection were moved to the Curator's office for cataloging, a step toward establishing a more appropriate functional relationship between curation of the collection and use by staff and the general public. The value of this function to the park and others was demonstrated by the record number of requests for services and growing demand for images from the "private" sector (researchers, media, publishers, educational organizations, etc.) Enormous amounts of time were contributed to media development projects e.g., various wayside exhibit plans, *Design Yellowstone*, dozens of publications, and the Ranger Museum audiovisual program. By year's end, proposals for video orientation programs for backcountry users and winter visitors pointed to another direction in which this office will add to its workload in the near future.

Special Projects

This year, the Artists-in-Residence Program and Performing Artists Series were conducted for the entire summer season. The Artists-in-Residence Program was housed in the Madison Museum and conducted activities took place in that area. Performing artists were featured throughout the park in amphitheaters and at the Mammoth Hotel Map Room. Funding for these programs was donated by YA. Future directions will be identified during a divisionwide strategic planning exercise in 1993.

In addition to the *Design Yellowstone* project described previously, the fourth consecutive year of the *Imagine Yellowstone Art and Writing Festival* was displayed in the Albright Visitor Center. Another record was set for entries (over 800). Approximately 70 of the best works spanning the four years of the competition were exhibited at the Museum of the Rockies in Bozeman, Montana, in the fall of 1992.

Information concerning the 1993 *Imagine Yellowstone* competition was mailed to over 4,000 art and science councils, organizations, schools, and students.

Training

Linda Young, Branch Supervisor, coordinated annual divisionwide training. All permanent interpretive staff were involved in planning and training and carrying out various tasks vital to its success. As a step towards improving communications with YA employees, YA was invited to participate in the first day of training, and a joint evening social was attended by over 100 employees and families. Instructors from Rocky Mountain Region's and Southeast Region's Interpretive Skills Teams presented updates on a variety of natural and human history topics. Based on course evaluations, this training was one of the most successful in many years.

In September, the Branch Supervisor coordinated a Rocky Mountain Region Interpretive Skills IIIA course conducted at the YCC facility. Forty interpreters from 24 NPS sites, including 3 Midwest Region sites, participated in the course. Nine Yellowstone interpreters attended, and three additional interpreters audited selected sessions.

A newly designed Orientation to the National Park Service course was offered in Grand Junction, Colorado, in November. The Branch Supervisor served as a "facilitator" presenting a session on leadership and providing overall course assistance.

ARCHIVES, MUSEUM, LIBRARY AND HISTORIAN'S OFFICE

Approximately 1,000 linear feet of archival records have been organized and a high density mobile shelving unit was installed to accommodate the accession of the 1988 fire records. Through the Montana State University Internship Program, students initiated box level

description for three record series. The Yellowstone Archives User's Guide was completed and provides researchers a box level inventory. Assistance to researchers was provided through an estimated 200 searches. Staff from the National Archives performed the annual inspection of the Yellowstone Archives and presented a favorable report. The Historian presented a paper and served on a panel at the annual conference of the Association of American Archivists in Montreal.

The Curator position became vacant in May and was upgraded from GS-07 to GS-09. The new Curator, Cyd Martin, was selected from a servicewide register of highly qualified candidates. There were 52 accessions in the museum collection representing over 2,000 artifacts. The cataloging backlog was reduced by 7,500 objects. The historic vehicles were consolidated into a single storage facility, and TW Recreational Services (TWRS) utilized capital improvement funds to lay a concrete pad to improve the storage environment of these vehicles. YA donated funds for the preservation of the historic photograph collection. Through this funding, approximately 6,800 images were converted from nitrate to safety film, museum quality storage was provided for the 80,000 image collection, and efforts were initiated to organize the collection and begin the process of cataloging the collection into ANCS.

There was no turnover in the librarian positions. Operating during the existing half day schedule, the library served approximately 2,000 people. Through donations from YA, other divisions, and limited funds, there were over 250 new accessions to the library. With YA donations, two computers were purchased to automate the library catalog records and to allow the library to interface with the Montana State University and University of Wyoming automated library systems.

Research of Native American history in Yellowstone was a primary focus. Other research efforts pertained to the history of the motorcycle ranger; administrative histories of military Superintendents Boutelle, and Anderson; preparing area histories for the HUDAT project, the review of text and preparation of a chronological history of Yellowstone for a new park handbook; and preparing approximately 100 written responses to information request phone inquiries. Work with outside organizations and agencies included: providing data for the "Wild West" film project; assisting the Museum of the Rockies in the development of a major exhibit concerning the history of Yellowstone; and planning and execution of a conference sponsored by Montana State University titled "The Humanities and the Greater Yellowstone Ecosystem: Defining a Research Agenda."

NORTH DISTRICT

As previously mentioned, due to the vacancy in the South District Naturalist position in 1992, the North District comprised Mammoth Hot Springs, Canyon, Norris, and Tower/Roosevelt. Greg Kroll was North District Naturalist.

The Mammoth Hot Springs summer interpretive staff consisted of the Sub-District Naturalist,

five seasonal positions, and a Student Conservation Aid (SCA). As in all sub-districts, YA sales clerks contributed greatly to the staffing of the Albright Visitor Center. We offered a minimum of one morning and one afternoon activity per day plus an evening program nightly in Mammoth (at the campfire center or hotel Map Room). Campfire programs at Indian Creek averaged one to two per week. Mammoth winter interpretive activities included three evening programs per week at the hotel, Fort Yellowstone history walks, and Mammoth Hot Springs walks.

The Norris summer interpretive staff was increased by one over the previous summer to accommodate the added work load resulting from the Museum of the National Park Ranger's first full summer season. Staff consisted of the Sub-District Naturalist and three summer seasonals. The Museum of the National Park Ranger was principally staffed by volunteers; retired National Park Service employees from throughout the country who generally did an excellent job and enjoyed the experience. Norris offered a variety of daytime programs interpreting geology and local history. Campfire programs were given at the Norris Campground six nights a week.

The greatest challenge at Canyon in 1992 was the installation and fine-tuning of the student-produced temporary geology exhibit in the visitor center (see "Exhibits"). Staffing remained the same as the previous year with a full spectrum of daytime programs and campfire programs were given nightly at the Canyon Amphitheater. Working out of the Canyon Warming Hut, the Sub-District Naturalist and one winter seasonal employee provided orientation and interpretation daily as long as Canyon was accessible to winter visitors.

Only one summer seasonal was present at Tower/Roosevelt again this summer providing five days of interpretation per week. This individual gave campfire programs at both Tower and Pebble Creek Campgrounds, increased roving time over previous years, and still managed to provide five different daytime programs per week. He also worked the frequent bear jams along Antelope Creek, Calcite Springs, and Dunraven Pass.

SOUTH DISTRICT

The Fishing Bridge Visitor Center was open to the public from May 22 through September 19 this year. The hours of operation were 8 a.m. to 5 p.m. during the core season from June 15 to August 22, and 9 a.m. to 5 p.m. during the early and late portions of the summer. The staff consisted of Sub-District Naturalist Carol Shively plus five seasonals. Visitation at the visitor center increased 4 percent over last year. An excellent level of visitor services and interpretive activities was provided for the public which is exceedingly noteworthy considering the meager staff size.

With reconstruction of the East Entrance road to begin next year, archeological field studies and excavations were conducted in the Fishing Bridge area this summer under the direction of Ken Cannon from the Midwest Archeological Center. Many interesting artifacts and other evidences were found. Ken provided a three-panel interpretive display which was exhibited

throughout the summer in the Fishing Bridge Visitor Center.

The area lights at the Bridge Bay amphitheater were relocated and improved, making movement around the area more comfortable and safe. The pavement on the bike trail to Natural Bridge was improved, and a designated foot trail was constructed to the top of the stone arch which should reduce wear, tear, and erosion.

The Grant Village Visitor Center was open to the public from May 22 through September 30. The hours of operation were 8 a.m. to 6 p.m. during the core season from June 12 to August 22, and 9 a.m. to 5 p.m. during the early and late portions of the summer. The staff consisted of Sub-District Naturalist Roger Anderson plus four seasonals. This is a reduction of three seasonals as compared to last year when staff had been increased to handle high visitation attracted to the exhibit entitled, "Bears: Imagination and Reality". The bear exhibit, which had been developed and installed by the Science Museum of Minnesota, was removed at the end of the 1991 season, and "Yellowstone and Fire" was moved back from the Canyon Visitor Center where it was displayed in 1991.

Campfire programs at Lewis Lake Campground were not offered in 1992 due to insufficient staffing. Abyss Pool, located in the West Thumb Geyser Basin, became very active, and the boardwalk near the pool was relocated for safety reasons.

The Old Faithful Visitor Center opened for the 1991-92 winter season on December 8 for the day-trip visitors and conducted activities began on December 18 when the Snowlodge opened. These activities terminated on March 8, and the visitor center closed March 15. The staff consisted of District Naturalist Joe Halladay, Sub-District Naturalist Dan Ng, and three seasonal interpreters. Daily interpretive services included a conducted activity in the morning, another in the afternoon, and an evening program. The Old Faithful staff also provided informational and interpretive services at the Madison Warming Hut. The Explorer's Museum was not opened for winter as it had been converted to house the Artists-In-Residence project which was initiated in late summer 1991.

The Old Faithful Visitor Center opened for the summer on April 15 this year and remained open through November 1. The core summer season hours of operation were from 8 a.m. to 8 p.m. Sub-District Naturalist Dan Ng transferred to Bryce Canyon National Park on May 31. His position was not filled the remainder of the year. Throughout that period the operation was supervised by District Naturalist Joe Halladay. No SCAs were available this year, so additional seasonal employees were authorized to provide adequate staffing. The summer staff consisted of nine seasonals and the District Naturalist.

The interior of the public restrooms at the Old Faithful Visitor Center were completely renovated this spring bringing them up to a highly respectable standard.

MAINTENANCE

General

The Maintenance Division's workload in 1991 and 1992 was highlighted by getting back to normal after the 1988 fires and a focus on the park's two major infrastructure problems-- roads and housing. The main personnel changes were the retirement of Charles Tobin (40 years) and Steve Eskro and the transferring of Assistant Chief of Maintenance Wayne Vandertuin and Facility Manager Paul Strobak. The interior supervisors have seen a 75 percent turnover, and new supervisors were in place in the three shops (Carpenter, Electric, and Plumbing). The crafts shop Facility Manager was filled by Mike Montgomery. Work with removal of old hazardous materials (paint thinners, etc.) and underground storage tanks is demanding more time and focus, and the residue of 100 plus years of visitors and activity still needs much work. 1992 saw OSHA and EPA inspections along with the Inspector General. The lack of a viable cyclic maintenance program is still increasingly evident, especially in roads. Even though Craig Pass is complete, the estimate to bring the roads up to standard now exceeds \$300 million.

A recycling program was begun in conjunction with our park concessioners, Hamilton Stores and TW Services. Drop-off points for glass and aluminum were established in housing areas throughout the park, and drop-off points for aluminum were set up in many of the campgrounds. In 1992, over 300 tons were recycled parkwide.

Buildings

Work on park buildings consisted of responding to critical work orders involving repairs necessary to keep the buildings open and functional. Due to base funding levels, cyclic and preventive maintenance have been deferred at least another year. Most building repair and rehabilitation accomplished this year was funded under the separately funded repair/rehabilitation and cyclic program. The remaining cyclic work was deferred, thus increasing the backlog of necessary work.

A variety of funding sources was pooled to accomplish numerous major building, utility, and housing projects. Funding sources included repair/rehabilitation and cyclic projects for 1991 and 1992 (rehabilitate buildings to meet NEPA - \$220,000, upgrade housing - \$375,000, paint park wide buildings - \$259,000, housing initiative - \$505,000, rewire/rehab buildings - \$515,000, repair heating plants - \$94,000, underground storage tanks - \$380,000, some winter use funds, and ONPS funds).

The four craft shops located in Mammoth Hot Springs were heavily involved with construction, rehabilitation, and utility projects parkwide, while keeping up with the more critical work orders that are called in daily.

1991

The major work in 1991 consisted of constructing the new North Entrance station and the conversion of the Norris Soldier Station to a Ranger Museum. This project was funded through a combination of donations and repair/rehab sources and was the focal point of the 75th anniversary of the National Park Service in 1991. The underground storage tank program continued, and Building 2 rehabilitation was completed.

1992

Replacement of major heating components and new installations occurred in Canyon (3), Grant Village (1), Lake (11), Mammoth (15), Norris (2), Old Faithful (93), and West (4). Electricians made repairs at nearly 100 park-wide locations and made replacements or new installations at nearly 200 locations. A multi-year project to replace electric meters at the concessioner's sites in the trailer courts was completed.

Mammoth: The new maintenance garage in Mammoth has had considerable work accomplished, and the operation has moved to the new location. The facility's center section was nearly completed with some major mechanical and utility systems installed throughout. Building 95 was rehabilitated. A porta-dorm was constructed. Building 36, the Administration Building, had numerous repairs and remodeling projects completed. A Mammoth-wide steam trap survey identified waste (now being corrected) that may save as much as \$18,000 in fuel oil costs. The exterior of 12 buildings and the interior of over 30 buildings were painted.

West Entrance: A new ventilation system was installed at the entrance station to mitigate the carbon monoxide problem. The entire entrance station was also stained to align with Yellowstone color standards.

Canyon: A new 500kw standby generator was installed as well as a new building to house it. Also a new underground storage gas tank for the generator was buried. Through contract, a new high pitched metal roof was installed on the Maintenance Shop, as well as the painting of the exterior.

Norris: Two new houses were completed. Restrooms in the parking area were repaired and stained. The Norris Museum was completely re-stained, and the roof was returned to its original color scheme. The new Maintenance Shop was completed and is now fully functional.

Grant Village: Through contract, a new metal roof was installed on the Maintenance building as well as a complete re-staining of the exterior. Repair/rehab continues on the exterior of the visitor center, campground comfort stations, ranger station, and the West Thumb warming hut.

Old Faithful: Contract work was completed on the new emergency services building. Park crews have begun interior work on the building. Six old cabins have been removed from the area and destroyed. Barn swallow mitigation continues on National Park Service buildings. The old generator building has been rehabilitated to provide additional storage. Upgrading of both lift stations continues.

Bechler: A new chlorination system has been installed for the developed Bechler area. The painting of buildings continued.

Madison: Through contract, a new, high pitch, metal roof was constructed on the maintenance shop. This was followed by day labor crews installing optimum levels of insulation in the attic area. The shop was also completely painted. In a joint venture with U S WEST Communications, a new stand-by generator building was constructed. Comfort station repair/rehab continues in the Madison Campground.

Lake: Historic maintenance occurred on the Fishing Bridge Museum such as new light fixtures, exterior staining, and work on the heating and electrical systems. Through contract, a new metal roof was installed on the maintenance shop, and the building exterior painting was completed. Bat mitigation measures continue on problem buildings in the Lake area. Repair/rehab work continues on Bridge Bay comfort stations, utility system buildings, and craft shop buildings. Due to limited funds and manpower shortages, work on stabilizing/preserving the Fish and Wildlife buildings has been deferred yet another year. This situation will continue to worsen until funds are available for complete restoration. Apartment units 709 and 710 (8-plexes) were reroofed under contract. New heating systems were installed in the multi-plex apartments. Construction was 90 percent complete on a new house, and the occupants moved in late in the year. Major utility tie-in for Federal Highways project was nearly completed, and the Federal Highways housing (4-unit and 5-unit buildings) was approximately 40 percent complete (contract).

Utilities

New standby generators were installed at Madison, Canyon, and Grant Village. This included new buildings, underground fuel storage tanks, etc. Work continues on phasing out inefficient sources of heat. Twenty-one efficient propane heating units replaced outdated furnaces or electric heat throughout the interior. Installation of electric meters on all permanent quarters and all concession trailer sites is complete. Rehab/replacement of major utility components continues in all areas which include pumps, valves, compressors, etc. Utility hook-ups for campground host sites in all campgrounds was completed. The Lake Hospital fire suppression system was completely rehabed by park crews.

Fuel Storage - Underground storage tank projects occurred at 14 locations in Mammoth. Canyon: A major waterline project was completed in the cabin area.

Lake: Major waterline and sewer projects were completed, and an LP gas system was installed.

Madison: A new generator was installed with cooperative effort by U S WEST and the NPS.

Northeast: The fuel distribution system was completed.

Housing

The quarters program continues to lose approximately \$350,000 - \$500,000 per year, and the quality of housing is very low. Over 25 percent of the units are of a temporary nature (trailers, transahomes, wingfoots) and were never intended for use in this climate. The Housing Management Plan, in conjunction with the Servicewide housing initiative, identifies a \$125 million shortfall in upgrading, rehabilitating, replacing, and adding additional housing. Interior park employees continue to live in trailers and other substandard housing throughout the winter.

A parkwide Environmental Assessment for all park areas except Mammoth, Lake, and Old Faithful was completed. A Finding of No Significant Impact (FONSI) was signed late in the year. This incorporated all facets of the community planning effort done in 1990 and 1991.

Progress continued in 1992 with upgrading sub-standard conditions of park housing. The retrofiting of government buildings and quarters for energy efficiency continued (adding more insulation, high efficiency heating units installed, thermo-pane glass installed, etc.) In excess of 500 square yards of carpet were laid throughout quarters within the park interior. Apartment repair/rehab continues at Lake, Canyon, Grant Village, Madison, and Old Faithful. Work continues on both interior and exterior work on quarters. Such tasks as painting, insulating, and general remodeling is on-going as time and money allows.

As previously outlined, two houses at Norris, one house at Lake, and a porta-dorm at Mammoth were constructed, and three trailers and an old wingfoot were sold or destroyed.

Roads and Frontcountry Trails

In 1991 and 1992, Yellowstone produced over 7,600 cubic yards of MC800 asphalt cold mix material. Out of this total, 2,500 cubic yards were produced for the Federal Highway Project on Sylvan Pass. The remainder of the cold mix was used to patch roads throughout the park.

Over the two year period, 3,500 cubic yards of AC10 hot mix material was produced at the Norris hot mix plant. Asphalt overlays were installed by Yellowstone park crews at the following locations:

<u>LOCATION</u>	<u>YEAR</u>	<u>CUBIC YARDS</u>
508 - Mammoth (New Garage)	1991	132
Mammoth Hot Springs	1991	36

Mammoth - Tower	1991	794
Canyon North Rim	1992	360
508 - Mammoth (New Garage)	1992	816
Mammoth parking lots	1992	428
North Entrance	1992	401
Mammoth - Norris	1992	30
Mammoth - Tower	1992	472
Old Faithful (EMS building)	1992	30

Yellowstone road crews chip sealed the service roads and parking areas for the U.S. Forest Service at their West Yellowstone office in 1991. Other chip seal projects included 16 miles from Canyon to Fishing Bridge and 2 miles of Craig Pass. The Craig Pass project will be completed during the 1993 season.

Road striping was accomplished in several areas in the park including the road from Canyon Junction to Fishing Bridge, Tower Junction to Northeast Entrance, Clay Butte to Montana state line, portions of the road from Mammoth to Tower Junction, Craig Pass, and the service roads at Grant Village.

National Park Service trucks hauled and stockpiled 4,300 tons of 3/8" chips from the Gardiner gravel pit to Craig Pass. They also transported 4,600 cubic yards of 1/2" minus aggregate from the Duck Creek pit (10 miles north of West Yellowstone) to the Norris hot mix plant.

Park maintenance crews removed dog hair pine in many locations throughout the park from road ditches near intersections and pullouts to increase visibility and driver safety.

In the North District, road crews eliminated a drainage problem at the Obsidian Cliff exhibit and patched the parking area. A wash-out at Sheep Creek was dug out and material deposited to control erosion.

Park road crews demolished and disposed of 12 comfort stations in the Fishing Bridge Campground. Large rocks used to line the roads and pullouts were removed or relocated to facilitate the rehabilitation of the campground to a natural state.

The Hamilton Store at West Thumb was obliterated and the area rehabilitated.

Two projects were completed in the Grant Village Campground. Material was transported and deposited into a wash-out area located in the "D" loop. Excess erosion under the Sandy Creek and Stream 1167 bridges threatened the infrastructures. The slopes were stabilized with fill material and the placement of log barriers. The areas were also revegetated.

A safety hazard was alleviated at the Grant Village Marina when the road crews removed and disposed of approximately 1,000 feet of deteriorated concrete sidewalk. The area was then backfilled against the bulkhead.

Yellowstone National Park purchased a used baghouse to be located at the Norris hot mix plant. The baghouse was retrofitted and installed in the plant. The baghouse was necessary in order for the plant to pass the state of Wyoming air quality test and obtain a permit to operate. Adjustments will be made to the hot mix plant during the 1993 season to increase productivity and eliminate dust emissions.

Material along the Gibbon River associated with the 1990 Gibbon canyon slide was removed to the Mesa Pit and the area landscaped.

Three culverts on Dunraven Pass were obstructed with mud and debris. They were dug out, flushed, and fill material deposited to prevent further erosion.

A catch basin was installed on the Norris-Canyon road at Cascade Creek. A drainage problem was undermining the road and shoulder.

On September 12, 1992, a wind storm swept through the Norris Campground, resulting in 196 trees blown down. Another 234 trees were identified as hazardous trees and were removed. Yellowstone road crews removed slash and hauled the cut logs to various dump sites.

A culvert was replaced at the entrance to the TWRs Canyon Lodge. Drainage ditches were also cleaned to prevent further erosion.

Park road crews removed 300 cubic yards of concrete and rock from a demolished generator building on Mt. Washburn.

Federal Highways Land Program

The Federal Highways Land Program (FLHP) in 1991 and 1992 resulted in overlaying most of the road from Lake to West Thumb (two 2-3 mile sections are not yet done) and a major reconstruction between West Thumb and Grant Village. The Lake, Old Faithful, and West Thumb bypasses were overlayed in 1991, and the West Thumb intersection was redone by obliterating a bypass road.

The West Entrance road was 75 percent overlayed in 1992, and material was hauled from Sylvan Pass to Norris for future projects. Parkwide Material Source and Parkwide Road Environmental Assessments were completed and signed as FONSI's. The EA for the East Entrance road was completed and is in the final stages with the Fish and Wildlife Service for wetland mitigation.

Construction plans for the first section of the East Entrance road was completed, and work is scheduled for 1993 with major road closures. A major communication effort with Cody, Wyoming, resulted in support for the proposed closures. Preliminary work on the Old Faithful to Madison route has begun.

Frontcountry Trails - 1991

Frontcountry trails work included a modification of boardwalk at Minerva Terrace in Mammoth, 1,430 L.F. of new boardwalk at Biscuit Basin, turning the Old Faithful geyser boardwalk over to extend its life, and trail work on the long trail to the brink of the Lower Falls at Canyon

Frontcountry Trails - 1992

Frontcountry trail work included special projects with the BLM to construct boardwalk at Pompey's Pillar and with the Fish and Wildlife Service to construct a fish viewing deck at Buffalo Ford. New boardwalk was also constructed at Geyser Hill (1,416 L.F.) at Old Faithful, Fountain Paint Pots (734 L.F.), Mammoth Terraces (43 L.F.), and Norris Geyser Basin (114 L.F.). A portion of the South Rim Trail was rerouted, and after major slides closed the trail, work continued on various other trails in the Canyon area. Work began on metal railing for steps and new boardwalk on the Red Rocks trail. Extensive work was accomplished on the stairs and overlook at Artist Point and the brink of Upper Falls for visitor safety and protection.

Log Structures - 1991

The majority of the year was spent on the Ranger Museum at Norris and on the new North Entrance Station.

Log Structures - 1992

The log structures crew worked with the Fire Cache and rangers in the relocation and reconstruction of the Upper Lamar Cabin to Hoodoo Basin.

BACKCOUNTRY TRAILS

Total accomplishments for 1991 included the following major items:

- 39 miles of tread maintained
- 1,117 feet of turnpike constructed or reconstructed
- 49 miles of trail cleared of trees or brush
- 1,172 feet of bridges constructed
- 1,520 hours constructing drainage devices
- 1,692 hours packing livestock

Major projects included work in the following areas: Thorofare, Eagle Pass, Lynx Creek, Long Trail, Fawn Pass, Blacktail, Buffalo Plateau, Shoshone Lake, Heart Lake, Heart River, Trail Creek, Fairy Falls, Fan Creek, Mystic Falls, Summit Lake.

Total accomplishments for 1992 included the following major items:

- 146 miles of tread maintained
- 239 feet of turnpike constructed or reconstructed
- 5,723 feet of tread reconstructed
- 2,003 hours constructing drainage devices
- 1,067 sq. feet of retaining walls
- 1,865 hours packing livestock

Major projects included work in the following areas: Wapiti Lake, Pelican Valley, Trail Creek, Lynx Creek, Long Trail, Lamar River Trail, Fawn Pass, Yellowstone River, Pebble Creek, Wraith Falls, Mt. Sheridan, Pitchstone Plateau, Shoshone Lake (north shore), Black Butte, Speciman Creek (east fork), Bechler River.

Landscape Architecture - 1991

Federal Highways

Provided landscape review on road reconstruction project. Pull-outs from Grant to West Thumb were obliterated. Plant materials from the Arnica Creek area and from the Madison to Biscuit Basin road corridor were collected. Other major road collection sections included East Entrance phases I and II. A cooperative agreement with the Soil Conservation Service, Bridger Plant Materials Center provided seed cleaning and propagation services.

Sign Program

560 signs went out of the Sign Shop. This included hand-routed signs, handmade (baked) aluminum signs and standard MUTCD signs. Two Grant 'Area' signs were constructed and installed. Several entrance signs were restored and painted. Road conditions signs went up on either side of Craig Pass. 176 gallons of stain and 1,020 posts were purchased and distributed parkwide.

Parkwide Planting Program

The tree-spade was used to plant trees on Craig Pass, West Thumb, and Yancy's Hole. Potted plants, grown from seed, were planted at Lava Creek picnic area.

Steven's Creek Nursery

A new irrigation system was hooked up to an electronic timer. Many barerooted plants were received from two contract nurseries, most were distributed throughout the park. The remaining plants were potted and left at the nursery. The nursery building was turned into a potting shed with the addition of walls and a roof.

Fireline

Permanent photo points were set up on rehabilitated bulldozer firelines in the fall of 1988 and 1989. Daubenmire research plots were set up on the bulldozer firelines in 1990. Both the photo points and the research plots are monitored once a summer after the growing season has peaked. The 1991 photos and data from the research plots showed a significant increase in vegetative growth.

Other Projects Included:

Montana Power- Pole Staining, powerline corridor edge treatment, Tower powerline topsoil salvage and project inspection.

Design Guidelines - research was initiated on four developed areas.

Sign Inventories - initiated for Norris, Canyon and Mammoth.

U S WEST - topsoil salvage and project inspection for fiber optic installation from Mammoth to Gardiner.

Landscape Architecture - 1992

Federal Highways Project-Seed Collecting

Provided landscape review and monitoring on road reconstruction project. Obliterated pullouts were seeded, raked and mulched along the completed road section from Grant Village to Bridge Bay. Seed collecting concentrated on the west side of the park from West Yellowstone to Madison Junction and Old Faithful. A cooperative agreement with the Soil Conservation Service, Bridger Plant Materials Center provided seed cleaning and propagation services. This will ensure an adequate seed supply for revegetating when those phases of road construction are completed.

Sign Program

The AutoCAD (Computer Aided Design) computer program was utilized quite heavily in the design of signs. It allowed for quick revisions and clear graphics. 330 signs went out of the Sign Shop. This included hand routed, baked aluminum and standard MUTCD aluminum

signs. The Canyon Village sign proposal was completed and the Canyon Junction 'Area' signs were constructed and installed. Other large signs constructed and installed: North Entrance campground listings, 'Caution Wildlife Are Dangerous' signs and numerous trailhead, river, amphitheater, campground and entrance signs. Decisions made: to use white on red for dangerous and hazardous signs, to use white on gray for thermal features (signs to be placed on boardwalks not on the feature).

Parkwide Planting Program

The tree-spade was used in the Fishing Bridge Campground rehabilitation project and at Old Faithful to replace the burned lodgepoles that had screened the housing area from the Grand Loop Road. The Old Faithful project was coordinated with Concessions and a contract tree-spade. Potted materials were planted at Lava Creek picnic area. In the Mammoth area, 2,250 limber pine seedlings were hand planted and the tree-spade was used to plant 16 deciduous trees.

Steven's Creek Nursery

The nursery received 3500 four-inch limber pine seedlings (park-collected seed) from a contract nursery. 250 of these limber pine seedlings were potted into six quart pots to be grown at the nursery. The rest of the trees were planted in the Mammoth area. Daily work at the nursery included transplanting plants that had outgrown their pots. Larger cottonwood trees in pots were planted directly into the ground at the nursery to be tree spaded when the trees are larger. An exotic weed eradication program was set up. This involved mowing and using small amounts of an approved herbicide. A tree spade was used to transplant cottonwood and aspen trees that had grown at the nursery, since fall 1989. These trees had grown an average of four to five feet in three years. The tree-spade transplanted 3 cottonwoods and 13 aspen to the Mammoth residential area.

Fireline

Photo points and data on Daubenmire research plots on rehabilitated bulldozer firelines were again taken this year to monitor vegetative growth. Due to a dry winter and a wet early summer, vegetation was not as thick as the previous year. The vegetation cover on some areas of the fireline was thicker than on the surrounding area. This was determined by photos and data that were collected on the monitoring of the firelines.

Canyon Village Wastewater Treatment Plant

The wastewater treatment facility being built in Canyon Village includes three new aeration lagoons, a headworks building, an AWT building, roads and other structures. Approximately 20 acres are disturbed of which 13 acres are to be restored. This DSC project started in the fall of 1992 and is scheduled for completion in 1995.

Top soil was scraped and stored for the entire disturbed area of the project. Tree clearing was completed. Timber and slash were stored behind the baseball field in the service area. The construction of a berm and having tight construction limits will keep the visual impacts to a minimum during construction and for the completed job.

Fishing Bridge Campground Rehabilitation

In 1974, the Master Plan for Yellowstone National Park identified the Fishing Bridge area as critical wildlife habitat and proposed the eventual restoration of the area to more natural ecologic conditions. The 1988 FEIS/DCP recommended phased removal of the 310-site NPS campground at Fishing Bridge.

In 1992, the Lake maintenance crew removed the road bed of loops H & I. A total of 850 cubic yards of asphalt and 250 cubic yards of soil were removed from the campground.

Next, the Landscape Architecture Division, with a crew, transplanted, by hand and mechanical spade, various native vegetation. This vegetation consisted of: Douglas-fir, lodgepole pine, sub-alpine fir, mountain brome, wild strawberry, and elk sedge. A total of 36 trees were tree-spaded, 135 seedlings hand-planted, 35 grass plugs hand-planted, 105 large boulders strategically placed, 2.5 pounds of mountain brome seed scattered, and various snags were utilized to achieve the desired revegetation effect. All major excavation was monitored to ensure archeological compliance. Approximately two loops will be revegetated per year until the entire campground has been returned to a more natural ecologic state.

U S WEST Yellowstone National Park Modernization Project

The \$7.9 million U S WEST project consisted of upgrading the park's telephone service. The project consisted of replacement of existing switches, the microwave system, and the local telephone cables. This project was mostly completed in the 1992 season. The tower, antenna, generator, reflector, and buildings at Madison Junction were completed. Of the 105,000 ft. of new cable proposed in the EA, 45,000 ft. was buried in 1992. The cable projects at Old Faithful, Grant Village, Canyon Village, Roosevelt, Lake Village (including the 900 pair to the Lake Hotel and the fiber optic cable to the microwave) and Bridge Bay are completed. Approximately 20,000 ft. of cable are to be buried at Mammoth Hot Springs, Madison Junction and Fishing Bridge in 1993.

The vast majority of new cable followed existing cable routes and previously disturbed terrain. During construction, natural and cultural resources were monitored. Care was taken to preserve the top soil. Wetlands and stream crossings were issued a 404 permit from the Army Corp of Engineers. Three stream crossings in the utility corridor to Bridge Bay used above ground conduits. The placement of all cable routes, pedestals and other structures tried to minimize the visual impacts.

Other Projects Included:

Design Guidelines - continued research.

Lamar Cabins - site analysis and site plan were developed.

Liberty Cap - redesign of parking area and implementation of design.

Seeding - two underground tanks in the park.

Maintenance Management System

Yellowstone's MMS program was recognized by the regional office as "one of the best in the Rocky Mountain Region." The Maintenance Management System has a very positive effect on the park's maintenance division. In spite of the logistics and the complexity of the park, MMS enables us to look at each location individually and also to merge the entire operation. It is used as a tracking tool when crews are sent to work in other districts or disciplines.

In the past three years, the program has been fine tuned and the information obtained is quite accurate. This enables the park to use MMS when dealing with other government agencies, concessioners, local communities, etc. The concessions Office used the information obtained from MMS to formulate a Maintenance Agreement in the new concession's contract.

The park has begun an extensive training program with all maintenance personnel. Eighty-four seasonal and permanent maintenance employees have received a two-hour basic Maintenance Management Training. There is a high level of interest in the Maintenance Management System from all levels of the Maintenance Division.

PLANNING, COMPLIANCE, AND CULTURAL RESOURCES MANAGEMENT

Planning and Compliance

Several long-term planning projects moved towards completion in 1992. The Lake/Bridge Bay Development Concept Plan, begun more than 20 years ago, went on public review in February. After formal consultation with the U.S. Fish and Wildlife Service, they issued a biological opinion in December concurring with the National Park Service's conclusion that implementing the plan would not jeopardize the continued existence of the grizzly bear. The final plan was in production at year's end.

Similarly, after several years of preparation, the parkwide community plan and employee housing initiative (HUDAT) was approved in December with the signing of a finding of no significant impact (FONSI). The plan recommends replacement and rehabilitation of existing substandard housing, provision of community facilities for year-round residents and looks to the future with projections of future housing needs at various park locations.

A project initiated in 1991, replacing the Fishing Bridge campsites closed in 1987 continued. A task directive was finished, scoping occurred, and initial drafts of most EIS sections were written. The Planning Office also assisted in implementing actions called for in the 1988 Fishing Bridge DCP.

Road improvement was the focus of a good deal of planning effort in 1992. The Parkwide Road Improvement Plan and EA was completed and released for public review in the spring, and a FONSI was signed in June. The East Entrance Road Reconstruction EA was also released in the summer for public review. Late in the year, work concentrated on the final design of the center segment of the road (Lake Butte overlook to Sylvan Pass) along with preparation of a Section 404 permit application to the U.S. Army Corps of Engineers. On the west side of the park, design and compliance were initiated for reconstruction of the road segment from Madison Junction to Biscuit Basin.

One of the largest single projects in the park for 1992 was the parkwide telephone modernization. Following National Park Service complaints about the poor quality of telephone service in Yellowstone, U S WEST responded in January 1992 with an \$8 million project to upgrade and standardize the telephone systems throughout the park. Over 100,000 linear feet of new underground cable was laid; microwave equipment was standardized; a new microwave transmitter and repeater (and donated generator) was installed to service Madison Junction; and electromechanical switches in the park were replaced with digital switches. By year's end, 90 percent of the telephone modernization project was completed.

A contentious issue, regulation of commercial traffic on U.S. Highway 191, moved from the environmental compliance phase to the regulatory arena in 1992. A second environmental assessment was completed and a FONSI signed for the project which would prohibit transportation of hazardous (placarded) material on the highway as it crosses parkland. New

regulations to enforce this decision were being promulgated at year's end.

Recognition of the importance of accessibility brought a renewed commitment to evaluate park facilities and programs for handicapped access (the Section 504 inventory). Public buildings at Mammoth, Old Faithful, West Thumb, Lake, Norris, and Canyon Village were evaluated as were 190 interpretive programs. The balance of the inventory is slated for completion in 1993.

In December 1991, Congress authorized a study of alternative modes of transportation in national parks as part of the Intermodal Surface Transportation Improvement Act. Three parks, Yellowstone, Yosemite, and Denali were targeted, although the report should have servicewide implications. Actual work on the study began in late spring and the contractor, BRW, Inc., spent much of the year collecting information, identifying issues, and consulting with NPS staff. The study is due for completion by early summer 1993.

Other projects of the Planning Office included updating the project status books in spring and fall and conducting quality committee meetings at Grant, Lake, Canyon, and Northeast. Work on an EA to replace the sleeping cabins used by the Yellowstone Institute and Expedition Yellowstone! programs at Lamar was initiated late in the year.

In the resources management planning field, the long-awaited Cultural Resources Management Plan approached completion. The Planning Office assisted with finalization of the Fire Management Plan and preparation of the Backcountry Management Plan and its EA, advised staff preparing the Bison Management EIS, and assisted the U.S. Fish and Wildlife Service in analyzing scoping comments for the Gray Wolf Reintroduction EIS.

From August through October, a number of park staff, including representatives from planning, administration, public affairs, and visitor protection/resources management, assisted with the Hurricane Andrew incident in south Florida.

Cultural Resources Management

With the April 1992 delegation of Section 106 responsibilities to Yellowstone, the Regional Office moved into a more advisory capacity in cultural resources management, and the park assumed the forefront in dealing with SHPO and the Advisory Council on cultural compliance issues. As in previous years, an emphasis of the year was on educating park staff on the importance of cultural resources management and providing guidance on cultural compliance procedures.

Through contracts, college field courses, and compliance related projects, along with avocational archeologists, slow progress on the inventory of the park's archeological resources continued. Four intensive archeological inventories (Mammoth HUDAT, Mammoth Little People's Learning Center, Lamar, Old Faithful - U S WEST and bus barn), two reconnaissance inventories (Mammoth, Black Canyon), and one series of shovel tests

were conducted by the Cultural Resources Management Specialist (CRMS). The CRMS coordinated two major inventory, testing, and evaluation projects conducted by Midwest Archeological Center personnel (Federal Highways projects - East Entrance road corridor centering on the Fishing Bridge area, Madison Junction to Biscuit Basin, and the road segment along the shore of Lake Yellowstone near Arnica Creek; and U S WEST (Grant, Canyon, Lake, Norris, and Madison). Results from even these "limited" inventories can be impressive. For example, the reconnaissance inventory of the Black Canyon/Yellowstone River trail identified 26 prehistoric sites in a relatively small area.

Cultural compliance documentation was prepared for the following projects: Little People's Learning Center, US West Old Faithful, U S WEST Lake, West Entrance and Canyon HUDAT, Fishing Bridge Hamilton Store restroom addition, Old Faithful Bus Barn, and Old Faithful. Park staff were advised on the preparation of compliance documentation for the Canyon Generator removal, South District Maintenance Office, Mt. Sheridan lookout tower, Tower HUDAT, and removal of historic buildings 2781 and 2782 at Old Faithful. Numerous park projects were reviewed to determine the need for Section 106 compliance.

Cultural resource management sections of a number of planning documents were prepared, and a wide variety of culturally related articles were reviewed. Some of these include: Fishing Bridge Campsite Replacement EIS, U S WEST EA, Draft NPS 28, Wolf document by K. Cannon, Archeological scope for MWAC Fishing Bridge/Federal Highways 1992 field season, Archeological scope for MWAC Arnica Creek 1992 field season, AML preliminary contract, Draft Environmental Assessment for Canyon Village, Madison, Norris, Northeast Entrance, Old Faithful, and South Entrance Lake/Bridge Bay DCP, EA for reconstruction of East Entrance Road, Native American Graves Repatriation Act implementation, Historic structure report for Old Faithful Inn, rehabilitation plan for the east and west wings of the Old Faithful Inn, and Yellowstone Institute Cabin Replacement, Lamar Buffalo Ranch.

The Cultural Resources Management Plan neared completion. A programmatic agreement for the parkwide road improvement project also neared completion; the preparation of this document was a collaborative effort with the Regional Office.

Two cultural resource courses were offered in the park: Archeology for Wildland Fire Personnel was a one day course taught by the regional archeologist and a regional staff archeologist; Preservation Maintenance Training was a two day course taught by various personnel (Regional Historical Architect, a contract Historic Architect, MT and WY State Historic Preservation Office staff). A preservation maintenance crew for TW Services (a park concessioner) was organized. This is the first preservation maintenance crew for TW Services.

PUBLIC AFFAIRS OFFICE

Personnel

Employees directly associated with the Public Affairs Office during 1992 included a GS-12, permanent full-time Public Affairs Officer, a GS-11 permanent full-time Assistant Public Affairs Officer, a full-time GS-7 Public Information Specialist, and three temporary GS-4/5 Public Affairs Assistants at different times throughout the year.

Joan Anzelmo, Public Affairs Officer, was selected for the position of Chief of External Affairs for the National Interagency Fire Center in October. She began her new position on November 16, 1992. The Assistant Public Affairs Officer, Marsha Karle, was appointed Acting Public Affairs Officer after Joan's departure. In September, Marsha Karle was requested by the NPS All-Risk Management team to assist with public information on Hurricane Andrew. During the somewhat frequent absences of the Acting Public Affairs Officer, Public Information Specialist Cheryl Matthews handled all the office functions. Cheryl handled more and more interviews with the news media.

At different times of the year three temporary GS-4/5 Public Affairs Assistants worked in the office: Gay Cabrall, Rebecca Stegeman, and Jon Dahlheim.

General Information Services

The Public Affairs Office serves as a clearing house of information for the park and local communities and responds daily to written, telephone, and walk-in requests for assistance and information.

A wide range of correspondence numbered more than 1,700 by mail and more than 3,500 by telephone. More than 10 percent of this correspondence was from foreign countries. Some of this correspondence required detailed answers; for example, the Public Affairs Office responded to more than twenty Freedom of Information requests this past year.

The Public Affairs Office worked closely with the Regional and Washington Public Affairs Offices, keeping them informed on a variety of matters and seeking advice on sensitive issues. Major news items involving Yellowstone included continued interest in the aftermath of the Greater Yellowstone Area fires of 1988 (especially as we approach the 5-year benchmark), fire management plan, bison management, wolf restoration, Church Universal and Triumphant, the Vision document, winter use planning, grizzly bear management, geothermal issues, overgrazing concerns, Highway 191, road reconstruction, increased regional tourism, and parkwide DCPs.

New Releases

There were 55 news releases, 10 emergency news call-outs, and 5 media advisories issued in 1992.

Filming Permits

Forty-eight actual filming and photography permits were issued in 1992 ranging from nature film documentaries to product commercials; however, this does not reflect the large number of film companies the Public Affairs Office worked with throughout the year (over 200) that often required extensive work-up and scheduling.

Photo/Slide Requests

The Public Affairs Office answered over 150 requests for loans of slides and photographs on Yellowstone subjects including numerous requests for fire and post-fire slides from the public and media. More than 1,500 photographs and slides were mailed out in response to these requests.

The Public Affairs Office continued to provide photographs for media interests on several newsworthy and special events throughout the year.

The Public Affairs Office continues to do the processing for other divisions in the park; over 300+ orders were processed.

Publication Editing Requests

The Public Affairs Office responded to more than 100 written requests for editing publications about Yellowstone and numerous phone requests for the same. These requests were often complex, requiring extensive research to provide accurate information for major national and international publications.

Official Visitors/Countries

Mr. Chatree Lipipipatvong, Wildlife Fund in Thailand - February

Thailand Forest Service delegates - March

Latin America government delegation, USIA sponsored - March

National Parks Authority, Korea, - April

Mr. Charoen Wimuttikosol, Ministry of Interior, Thailand - May

Mr. Jan Eriksen and Mr. Allan Hoxbroe, Denmark - May

Mr. Fu Xing (Deputy Director of Jilin Provincial Environmental Protection Bureau), Mr.

He Wenbo (Director "Environmental Management of China" magazine), Ms. Li Yue

(Director, Editorial Department "Environmental Management of China" magazine) -

May

Senior Bavarian Government officials - June
 Shinya Uno, Japan official of the Fisheries Agency - June
 Bruce Brockett, Fire Manager of South African Parks - June
 Sten Fulkner, Regional Director of Tourism for the Swedish Forest Service - June
 India delegation, Department of Agriculture - July
 Mr. Oluf Aalde, Ministry of Agriculture and Department of Forestry of Norway (equivalent to the Chief of Forest Service at WASO) - July
 Indian officials connected with Ajanta-Ellora Plan - July
 Francoise Ngendahyo (Director General for the Ministry for the Promotion of Women and Social Protection, Burundi), Rajat Sharma (Editor for Daily Newspaper, India), Gamal Badawi (Editor for newspaper in Egypt), Ziaur Rahman Khan (Member of Parliament for the Bangladesh Nationalist Party), and Nie Kruger (General Manager of Democratic Media Holdings, Namibia) - August
 Mongolian government officials - August
 Mr. Dorjgurhomyin Batbold (Senior Expert for the State Committee for Nature and Environment Control) and Mr. Djanchinglin Tserendeleg (Vice Present for the Mongolian Assoc. for Conservation of Nature and Environment), Mongolia - August
 Mr. Stephen Kihaule, Project Manager of Maswa Game Reserve at Dar es Salaam, and Ms. Rehema Tibanyenda, Game Management Office for the Project Analysis and Planning Section, Ministry of Natural Resources and Tourism of Dar es Salaam - August
 The Honorable Fernando Ledesma (President of the Council of State; Magistrate of the Supreme Court of Spain) - September
 The World Bank in Washington D.C. and Sampsel Consulting Services sponsored 5 guests from Belarus - October
 Chinese study team (5 people) - October
 Michael Trezzi, Director Ministry of the Environment, Czech Republic - October
 Ephriam Chafesuka, Zimbabwe - October
 Billings Committee on Foreign Relations - sponsored Chinese Ambassador; met with park staff - October
 Mr. Mark Kulyik and Mr. Rein Kuresoo, Estonia - October
 George Grossek, Wildlife Planner, Department of Conservation and Environment, Australia - November

Media Contacts

This is a sampling of many of the media we assisted in person. Approximately 2,000 more were assisted by phone in 1992 representing national, international, regional, and local media.

TV/Video/Filming/Etc.

Wolfgang Bayer Productions - January
 Antler Designs - February

KUTV - April
 KTUX TV, Salt Lake City - April
 Steve Hix Photography (Ray-O-Vac commercial) - May
 The Natural Image Films - May
 NBC Dateline - June
 NBC Evening News - May
 KFGO, Fargo, North Dakota - May
 KTGS, Great Falls - May
 Video Production Company, St. Louis - June
 Far West Communications - June
 CNN - June
 Jamie Cook Studio - June
 KTWO TV, Casper, Wyoming - June
 Michael O'Neill, Inc. - June
 Neiman Marcus - June
 International Video Corporation - June
 Nickelodean - June
 King TV, Seattle, Washington - June
 PBS "American West" - June
 Media Resources - June
 Pocatello TV - June
 Visible, Inc. - June
 CBS Evening News - June
 Ken Walz Production, Inc. - June
 Greystone Pictures - July
 KULR - July
 ESPN - July
 Steeplechase Films (PBS) - August
 KTVM - August
 SuperTek Productions (IMAX) - August, September
 KTVB TV - August
 KXLY TV, Spokane, Washington - August
 Brentwood Music - September
 Insignia Films (PBS) - September
 Nature Recording - September
 PBS "Newton's Apple" - September
 ABC Evening News - October
 Zoo Life with Jack Hannah - December
 Audobon Society - December

Radio

KMTN - all year
 KBOZ - all year

Idaho Falls Channel Six - January, February
 KTVB, Boise, Idaho - January
 Wyoming Public Radio - April
 National Public Radio - May, September, December
 KXLF - June
 KMMS - August
 KXLO - December

Magazines/Newspapers/Etc.

Idaho Post Register - all year
 Jackson Hole News - all year
 Jackson Hole Guide - all year
 Billings Gazette - all year
 Bozeman Chronicle - all year
 Livingston Enterprise - all year
 Associated Press - all year
 Casper Star Tribune - January, September
 Rocky Mountain News - January
 KC Publications - March
 Parent's Magazine - April
 Miami Tribune - April
 Christian Science Monitor - April
 Audobon Magazine - April
 Denver Post - May
 Daily Times, Rawlins, Wyoming - May
 National Geographic Magazine - May, June
 Santa Barbara Magazine - June
 Antiques West Monthly - June
 Wyoming Eagle - June
 Spokesman Review, Spokane, Washington - June
 Salt Lake Tribune - June
 Seattle Times - June
 L.A. Times - July
 New York Times - July
 San Diego Union Tribune - July
 Minneapolis Tribune - July
 Washington Post - July
 Philadelphia Inquirer - September

Freelancers

Todd Wilkinson - all year
 Chuck Bartlebaugh - May

Jim Robbins - May, July
 Bob Ekey - all year
 Roxanne Foster - January
 Sherman Maxwell - April
 Ron Platt - May
 Claine Udy - May
 Janet Bronk - May
 Ted Landfere - July
 Bill Ballenberg - July
 Mary DeLean Houck - August
 Ernestine Miller - August
 Bill Gearhart - August
 Jeff O'Gara - September
 Micah Morrison - October
 Greg Northcutt - October
 Steve Swinburne - December

FOREIGN MEDIA CONTACTS

TV/Video

Les Productions De L'Aigle - France - February
 RIAS TV (German) - February, July
 Earth Talk, Japan - February
 Green Contact Productions (IMAX) - England - August
 Camenzind Productions - March
 Gazelle Film Productions - May
 Index Film and TV Limited - May
 BBC - July
 Macleod & Partners, England - July
 Hokkaido Bunka Hoso - September
 USIA Television Service, Korea - September
 Seoul Broadcasting System Production, Inc. - September

Radio

Canadian Broadcasting Network - May
 German Radio - June
 Czechoslovak Radio Prague - July

Magazines/Newspapers/Etc.

London Daily Telegraph - April
 Asahi Shimbun, Japan - April
 Take a Break Magazine - May
 Global Views Monthly, Taiwan - June
 Der Bund, Switzerland - June
 Independent Magazine of London - November

Freelancers

Gilles Mingasson, France - May
 Baxter Omohundro - May
 Patrick and Helen Massey - May
 Ulrich Pfaffenberger, Bavaria - May
 Sylvaion Grandadam, France - October

Congressional/Official Visitors

Throughout the year, the Public Affairs Office assisted with programming and arrangements for United States government dignitaries, park officials, and other guests. A sampling of these visitors follows:

Associate Regional Director Boyd Evison - January
 Regional Director Bob Baker - February
 Secretary Lujan - February
 Congressman Lindsay Thomas - February
 Governor Mike Hayden - February
 Governor Stan Stephens - June
 Mr. Abe Aspel, Chief Economist for DOE - June
 Tom Saily, Secretary Lujan's Office - July
 Assistant Secretary John Sayre - August
 Representative Robert Borski - August
 Representative John Kasich - August

Meetings

U.S. Forest Service/Yellowstone meeting on bison issue - January
 Wyoming Tourism meeting to discuss road construction - January
 Greater Yellowstone Coalition Conference - March
 Grand Teton/Yellowstone management meetings - March, May, October
 At request of U.S. Travel and Tourism Administration, U.S. Department of Commerce,
 attended travel trade conference and opening of EuroDisney representing NPS -
 March, April

Montana Governor's Conference on Tourism - April
 Wyoming Governor's Conference on Tourism - April
 IGB Subcommittee meetings - April, May, July, September
 GYC annual meeting - May
 GYA Public Affairs Officers meeting - June

Tours

Wyoming FAM trip - German travel writers - February
 Wyoming FAM trip - 45 Canadian and U.S. travel writers - April
 Montana FAM trip - "Yellowstone Country" writers - October

Miscellaneous

Make-A-Wish Foundation - May, June, July, August
 Special event at Old Faithful Inn opening - May
 Museum of the Rockies, Yellowstone exhibit - February, March, April, May
 Protected Areas Management Program Seminar on Public Relations/Communications
 (Alberta, Canada) - March
 Special dinner for Chip Davis - March
 Defenders of Wildlife Conference - June
 Abundant Wildlife demonstration - June
 Eastern Michigan University (met with students for public affairs orientation) - June
 Western Illinois University (Env. Cons. Outdoor Education Expedition) - October
 Conoco 75th Anniversary special event (Lake Hotel) - June
 Joyce Walker, Disney (internship) - August
 Red Lodge Chamber of Commerce Annual Dinner - October
 Christmas Tree Lighting/Community Open House - December

RESOURCE MANAGEMENT AND VISITOR PROTECTION

Personnel

Deaths

Tak Kawakami - Park Ranger, West District

Transfers out of RM&VP

1. Debbie Bird, Old Faithful Sub-District Ranger, to Superintendent, Devil's Tower.
2. Steve Frye, Assistant Chief Ranger, to Chief Ranger, Glacier National Park.
3. Doug Ridley, Bechler Sub-District Ranger, to District Ranger, Rocky Mountain National Park.
4. Bob Mihan, Law Enforcement Specialist, retired.
5. Dub Kennedy, Park Ranger, resigned.
6. Jean Nuetzel, Administrative Assistant, to Administrative Assistant, Superintendent's Office.
7. Mary Murphy, Budget Analyst, to Concessions.
8. Cyd Martin, VSO Clerk, to Curator, Division of Interpretation.
9. Melissa McAdam, Fire Program Clerk, to U.S. Fish and Wildlife Service.
10. Mary Jane Vaughn, North District Clerk, resigned.
11. Eileen Andes, Communications Operator, to Division of Interpretation.
12. Vivian Ridley, South District Clerk, resigned.

Transfers to RM&VP

1. Chris Hansen, Criminal Investigator, Old Faithful, from Criminal Investigator, Whiskeytown.
2. Mike Murray, Assistant Chief Ranger, from District Ranger, Sequoia & Kings Canyon National Parks.
3. Margie Hoffman, Administrative Assistant, Superintendent's Office, to Budget Analyst, Chief Ranger's Office.
4. Joe Bueter, Park Ranger, Denali National Park, to Park Ranger, Old Faithful.

In-Park Reassignments

1. Michael Keator, Park Ranger, Old Faithful, to Campground/ Backcountry Office Supervisor, Grant Village.
2. Pat Ozment, Criminal Investigator, to Law Enforcement Specialist.
3. Georgia McAdams, Chief Ranger's Secretary, to Administrative Assistant, Chief Ranger's Office.
4. Anita Varley, Park Ranger, Visitor Services Office, to Park Ranger, Backcountry Office.
5. Tammy Wert, Park Ranger, Backcountry Office, to Park Ranger, Visitor Services Office.
6. Keith Young, Park Ranger, Mammoth, to Night Shift Supervisor, Mammoth.
7. Colette Daigle-Berg, Lamar Assistant Sub-District Ranger, to Tower Sub-District

Ranger.

8. Les Inafuku, Tower Sub-District Ranger, to Old Faithful Sub-District Ranger.
9. Alice Siebecker, Lake Assistant Sub-District Ranger, to Lake Sub-District Ranger.
10. Lisa Pottebaum, Communications Technician, to Fire Program Clerk.
11. Brian Helms, Park Ranger, Visitor Services Office, to Park Ranger, Old Faithful, to Park Ranger, Mammoth.

New Hires

1. Sonya Anderson, Chief Ranger's Secretary.
2. Susan Perkins, Headquarters District Clerk.
3. Kris McAdams, North District Clerk.
4. Karen Reinhart, South District Clerk.
5. Martha Downing, Communications Operator.
6. Jon Edwards, Park Ranger, Visitor Services Office.
7. Gary Nelson, Communications Operator.

Park Visitation

1992 was a record year for visitation with 3,186,590 visitors travelling to Yellowstone. This represented an increase of 7.7 percent over the previous year (1991).

Visitor Entry by Entrance Station

West	1,067,068
South	864,928
North	546,549
East	543,770
Northeast	164,275

Fee Collection

Total fees collected in FY 92 from all sources was \$4,154,084.

<u>Entrance</u>	<u>Total</u>
West	\$1,335,753
South	71,573
North	550,446
East	890,603
Northeast	<u>223,420</u>
	\$3,071,795

Campgrounds: \$1,058,499 collected in FY 92

Boat Permits

Motorized	\$15,520
Non-motorized	<u>8,200</u>
	\$23,790

Visitor Services OperationsPermits Issued

Golden Eagle	8,402	Park Supplier Permits	218
Golden Age	10,500	Fishing Permits	159,204
Golden Access	991	Employee Vehicle Permit	4,000
Annual Area Passes	13,244	Fee Waiver	246
Boat Permits: motor	1,552	Special Use Permits	110
non-motor	1,640	Limited Concession Permit	63

Commercial Operations

The majority of the Special Use Permits were for commercial traffic from Mammoth to the Cooke City/Silver Gate area.

109 Commercial Use Licenses (CUL) were issued for various guided commercial operations (guided fishing trips, ski touring, etc.)

Limited Concessions Permits (LCP)

An improved method of administering, tracking, and evaluating all commercial backcountry stock use was implemented in 1990. It is now regulated through LCPs. This change from CULs enables us to more efficiently manage backcountry stock use and has resulted in greatly improved communications between the outfitters and our staff. Administration of the LCPs will be handled by the Backcountry Office staff starting in 1993.

Visitor Information

The Visitor Services Office received approximately 12,000 information calls and responded to approximately 5,600 informational requests. The staff inventoried and distributed 35 different park publications such as maps, newspapers, bison and bear warnings, backcountry brochures, boating permits, etc. to 11 campgrounds, 5 entrance stations, and 7 visitor centers. Over 30 tons of brochures, maps, and newspapers were delivered by the office staff though the course of the summer. The office supervisor, with the help of the Communications Center and Interpretive staff, coordinated and produced park informational mail-out packages.

Lost and Found

The office received 4,073 found items and over 1,800 reports of lost items. Over 893 items were matched to lost reports and returned to owners, and 1,500 items were returned to finders.

<u>Communications Center Operations</u>	<u>1991</u>	<u>1992</u>
Case Incidents	4,983	4,853
Bonds Issued	2,397	2,406
Motor Vehicle Accidents	486	510
Employee Motor Vehicle Registration	4,037	3,297
Permanent employees	866	242
Seasonal employees	3,036	2,953
Cooke City residents	135	102
Identification Notices	264	325
Number located	65	61
Percent located	24.6	18.8
Criminal History Checks	1,669	1,502
Law Enforcement Checks	45,447	48,476
Vehicle Checks	9,864	10,229
Persons	7,509	7,397
Local	10,357	11,110
NCIC Entries	22	14
NCIC Inquiries	17,868	19,740
APB's	8	28
ATL's	16	27
Wrecker Requests	266	228
Incoming Calls	291,658	342,437
Call taken by *CINDI	164,451	182,674
Percent of call taken by CINDI	56.4	53.3
Information Packets Mailed	25,483	29,158
Foreign	2,418	2,034
Regular	23,065	27,124

Visitor Protection

Permanent commissioned rangers	50	44
Seasonal commissioned rangers	75	54

Additional certification include:

Deputy USF&W Agents	38	31
County Deputy Sheriff	30	24
Deputy U.S. Marshal	2	1
SCUBA certified	5	4
Firearms Rangemaster	10	27

Law Enforcement

Motor Vehicle Accidents	486	510
Park I Offenses	172	164
Park II Offenses	2,968	3,021
Violation Notices Issued	2,589	2,623
Case Incidents Reports	4,983	4,853
Court Cases (heard in Yellowstone)	254	230
Car Clouts	99	65

Resource Violations

Preservation of Natural Resources	56	38
Snowmachine Violations	163	165
Camping	227	195
Closed Area Violations	271	252
Firearm Violations	30	25
Fishing Violations	52	55
Swimming/Bathing Violations	121	115
Wildlife Hunting	33	13

Emergency Medical Services

The following is the breakdown of 1992 medical responses:

Minor Medicals	164
Basic Life Support	391
Advanced Life Support	<u>72</u>
TOTAL	627

During 1992, the RM&VP Division performed or assisted with 38 lifeflights and 233 NPS Ambulance transports. These numbers do not include medical cases at the Mammoth Clinic, Old Faithful Clinic, and Lake Hospital. The park's ranger staff included 1 Paramedic, 11 Park Medics, and 49 Emergency Medical Technicians.

Structural Fire

Summary of alarm and fire responses:

	<u>1990</u>	<u>1991</u>	<u>1992</u>
Alarms	206	192	157
Fires	20	26	17

There were two Firefighter I and II classes held during 1992. These classes trained 33 structural firefighters. In addition, there was 16 hours of live fire training conducted in Mammoth that was attended by 35 trainees. There was also five 16 hour Pump/Apparatus training classes conducted for 46 trainees.

Wildland Fire Operations

The revised Wildland Fire Management Plan was approved in April 1992 which allowed for prescribed natural fires in Yellowstone once again. There were a total of 29 fire starts; 16 Prescribed Natural Fires (PNF), one of which was converted to a wildfire when it burned out of prescription; 13 wildfires, one of which was a downed powerline, one an unattended campfire, and one a prescribed burn that burned out of control and was declared a wildfire. A total of 485 acres were burned; 2 acres as PNF's, and 483 acres as wildfires, 480 acres from the escaped prescribed burn. 477 of those acres were in a grass only fuel type that previously burned in 1988. The total cost of suppression operations was approximately \$118,000.

Thirty-two personnel were dispatched to eighteen out-of-park wildland fire assignments to assist the U.S. Forest Service, BLM, BIA, and State of Montana. Assignments included overhead personnel, helitack crew with park helicopter for initial attack, and helitack personnel managing large CWN helicopters.

Approximately 75 park personnel were trained in wildland fire courses in 1992. These courses included S-130/S-190, Basic Firefighter; S-217, Interagency Helicopter Training; RX-91, Fire Monitor Training; and Short-Haul Training.

The fire monitoring program continued to sample 1,000 hour logs and other vegetative material for fuel moisture contents at 42 sites throughout the park. This information provides accurate data that can be directly related to expected fire behavior and is a intricate component of the PNF prescription parameters.

Air Operations

1992 was the first year of a new three-year contract agreement with Mountain Rotors, Inc. The aircraft provided was an Aerospatiale SA-315B "Lama." The contract agreement

changed from a daily availability guarantee to a 200 flight hour guarantee for the 108 day yearly contract period. The change represented a savings to the government of approximately \$40,000 over the three-year contract period. The flight rate was \$752 per flight hour.

The contract helicopter was flown 200.1 flight hours, a decrease of 91.2 flight hours from 1991. Fire management operations accounted for 43 percent of the use, with 78.3 flight hours flown in support of wildfire and prescribed natural fire activities. Search And Rescue activities were predominantly in support of adjoining counties during 1992 with three short-haul operations successfully carried out.

There was one aircraft incident during 1992. The pilot punched off a sling load during the Upper Lamar Cabin project when a wind sheer resulted in uncontrollable flight.

There were 38 aeromedical helicopter flights during 1992, up from 24 in 1991. EIRMC (AIR I) flew 27 transports, Bannock flew 4 transports, Billings (HELP FLIGHT) flew 5 transports, and Jackson Air Ambulance flew 1 transport, and the Park's contract helicopter flew 1 transport.

Project work in aviation included moving a backcountry patrol cabin from Miller Creek to Lamar Mountain, removal of debris from the B-47 wreckage, and removal of approximately 20 tons of debris and trash from remote locations in the backcountry.

Wildlife

Backcountry Management

Extensive work was accomplished upon the *Draft Backcountry Management Plan*. Backcountry campsite inventories were completed and used to evaluate a number of campsites. This data was input into a computer database and analyzed, allowing development of campsite standards based on quantitative information. VIP Lynn Bickerton was used through the summer to help calibrate backcountry trail day use using trail register sign-ins. This data was also analyzed for incorporation into the plan and provides the most accurate estimates of day trail use the park has had to date.

There were 6,575 backcountry permits issued, 258 commercial outfitter trips planned, 10,572 backcountry office inquiries, and 331 backcountry information packets mailed out in 1992. A backcountry workshop, at the suggestion of West District Ranger Bob Seibert, was hosted by YNP and was well represented by parks of the Rocky Mountain Region and from WASO. Additional computer hardware was acquired and progress begun on setting up a computerized backcountry permit tracking system.

Bear Management

Bear management committee meetings were held as necessary, such as to discuss the bears that frequented the Antelope Creek roadside area of the park. Dozens of hours of assistance were provided to the field in monitoring and attempting to aversively condition those bears, and in traffic control.

There were no bears trapped in YNP in 1992, although there was one unsuccessful attempt.

There were no human-caused bear mortalities in YNP in 1992. There was one serious bear-caused human injury, when former park employee Sara Muller had a surprise encounter with a grizzly sow with cubs on the Buffalo Fork Trail. She was helicoptered out; no action was taken against the bears.

Whitebark pine transects and bear utilization/carcass surveys were conducted in coordination with the Interagency Grizzly Bear Study Team.

There were 1,892 bear sighting reports recorded for the calendar year.

Productive discussions were held with Keith Aune of Montana Fish, Wildlife and Parks' Wildlife Lab about records and curation of dead grizzly bears from Yellowstone National Park. Because of this cooperation, they are to provide us with centralized grizzly bear mortality records for the park. Records were kept on roadkilled wildlife.

Five staff attended the Ninth Annual International Conference on Bear Research and Management, and Wildlife Biologist Kerry Gunther presented a paper.

Preliminary meetings were held to address the need to rewrite *Yellowstone's Grizzly Bear Management Plan*. Administrative and technical support was given to the IGBC Yellowstone Ecosystem Manager's Subcommittee Chairman. Input was given on the revised *Draft Grizzly Bear Recovery Plan*, and on several plans related to the proposed grizzly bear theme park in West Yellowstone.

An extensive amount of time was spent in Section 7 consultation with the U.S. Fish and Wildlife Service on the *Lake/Bridge Bay DCP* during the year, and technical assistance also given for other planning projects, including the *Fishing Bridge Campsite Replacement EIS*, *HUDAT EA*, and the *U.S. West Modernization Project*. The Shoshone National Forest and the Custer NF/Beartooth Oil and Gas EIS's were reviewed and comments given to be consolidated by the Department of the Interior.

There were 2,672 recorded phone calls regarding bear management in 1992; 134 bear management information packets were mailed out. About 90% of a project to computerize bear sightings from 1983-1992 was completed on a D-base program and funded with planning office cooperation. Data from 1970-1982 remains to be done. Staff worked

extensively with commercial photographer Ray Paunovich on filming bears; in cooperation for park assistance, Bysch Productions are to provide a series of bear slides and video that we can use for visitor education/information.

Wildlife Health Monitoring

The park entered into a cooperative program with WASO to set up a protocol for wildlife health monitoring using existing resource management and research projects or other opportunities to sample wildlife health. WASO provided training in animal necropsy and recognition of wildlife diseases and sent four staff persons to a wildlife capture and handling course in Boise, Idaho. The park drafted a step-down system for monitoring and sampling wildlife diseases, began opportunistic collection of samples, and sent dozens to the Wyoming Veterinary Lab for analysis. With a small WASO funding contribution, YNP acquired sampling equipment, a centrifuge, and several freezers to help store samples.

Bison

Considerable progress was made in writing a *Long-Range Bison Management Plan*, including gaining commitment from the cooperating agencies on the EIS process, agreement on limits to this EIS and that a full fledged EIS encompassing the greater Yellowstone area has to be written at a later date, no comment regarding total eradication of brucellosis, and selecting a preferred alternative that all agencies could agree upon. The bison management planning effort continues to be underfunded and understaffed.

APHIS requested 60 bison for research purposes to be sent to Texas A & M. The request was denied on the grounds of inadequate NEPA compliance. The park had grave reservations about the scientific structure or framework of the research project.

Birds

This is the fifth year of evaluating post-fire impacts on birds of Yellowstone. An evaluation system was set up to ascertain the validity and quality of bird observations in the wildlife file and a value judgment assigned each of the observations. A milestone was reached in the private government cooperative trumpeter swan reintroduction program at the Call of the Wild Ranch. Two introduced trumpeter swans actually tried to build a nest in two different locations on the ranch and wild trumpeter swans appeared; two adults and one cygnet showed up on the ranch through the spring and summer months. To date there are nine trumpeter swans at the Call of the Wild Ranch and two to the south at the Dana Ranch. Mute swans have been allowed to be killed on the ranches.

Trumpeter swans inside Yellowstone continue to struggle. Of eight nesting attempts, only two actually hatched young and only one pair was successful in raising young to a fledgling stage. Only four trumpeter swan cygnets were fledged in Yellowstone. This emphasizes the need to work to bring trumpeter swans back to areas outside the park as well.

A total of 80 osprey nests were counted this year with 59 of the nesting pairs successful in raising young. This results in an impressive grand total of 104 osprey young fledged in Yellowstone in the calendar year.

Peregrine falcons appear to be recovered in Yellowstone with a record eight nesting pairs fledgling a total of seventeen young. All of these are natural eyries.

1992 also proved to be a good year for bald eagle production. A total of thirteen eaglets fledged from sixteen active nest sites. This was probably due to favorable weather conditions during the early nesting season.

Common loons continue to be stressed. Of the eleven nesting attempts, only four known pair were successful in fledgling a total of six loonlets. The overall common loon population in Yellowstone is estimated at from forty to sixty individuals.

Harlequin ducks continued to be monitored on a park-wide basis with an emphasis in the Le Hardy Rapids area. Concern in the past years in the rapids area has related to human disturbance. 1992 marked the second year of a three-year study to look at human-related displacement problems.

A quarterly Yellowstone bird report was initiated, documenting important changes and observations in bird populations, to be incorporated into park files and to be sent to other organizations. 1992 was an extremely sensational year for the migration of painted lady butterflies in Yellowstone. The migration peaked during the month of April, and a number of birds fed upon this resource.

Vegetation/IPM

Exotic vegetation control, hazard tree identification and removal, and campground overstory management have all suffered greatly in 1992 as a result of poor funding. Incidental high-priority hazard trees were removed throughout developed areas, but crisis management delegated most project direction. At Norris Campground, what was believed to be a windshear incident blew down 194 trees; 236 additional trees were subsequently removed during the height of the camper season.

An exotic vegetation management area was initiated by the West District Resource Management Coordinator (RMC) to help control weeds in the Henry's Fork area. Exotic weeds continue to multiply in the park. Efforts to contain expanding species remain inadequate. A number of IPM actions were taken, including work with both concessioner and park service staff to address pack rats at the Norris Museum, swallow mites at a number of buildings in Mammoth, swallows throughout the park, woodpeckers in housing units in Mammoth, small rodents in the Mammoth concessioner area, wasp situations in Mammoth, ant problems at Lake and Mammoth, as well as a number of other consultations.

Mining and Minerals

Proposals for the reclamation of three abandoned gravel pits and their associated access roads (Little Thumb, Dry Creek, and Ice Lake) have been approved for funding by the Wyoming Abandoned Mine Lands Program. Resource inventory and preliminary design work have begun. The Montana Abandoned Mine Lands program has authorized \$27,500 for the reclamation of the abandoned McMin coal mine. A reclamation plan is being developed.

The plan of operation and permit application for the proposed New World gold mine near Cooke City is in its fifth round of completeness reviews by federal and state agencies and local interest groups. Proposals to mine the Como and McLaren open pits and to use cyanide processing have been dropped. The current proposal includes an underground mine, a processing mill with flotation and gravity concentration systems, and a 5.5 million cubic year tailings impoundment. Most activity will be in the Fisher Creek drainage.

The Mineral Hill gold mine at Jardine is currently planning an expansion of mining activities into the Crevice Creek area, adjacent to the park's north boundary. The park is a member of the community task force.

Park staff reviewed and commented on draft EISs for oil and gas leasing on the Shoshone and Gallatin National Forests which are east and north of the park.

New staff member Mary Hektner is now tracking geothermal monitoring. Dr. Irving Friedman (USGS) conducted a training session for park staff on the chloride flux data management program. A lack of money continues to prevent the chemical analysis of the geothermal water samples for chloride content.

Correspondence regarding the Marysville Canal off of the Falls River continues with the Federal Energy Regulatory Commission. The park is requesting that the developer pay for a gaging station upstream of the diversion that would allow the continuation of the requisite stream flow data necessary for our chloride flux monitoring.

The geothermal boat purchased with NRPP small project monies was officially named The Little Dipper.

Water Resources

The Reese Creek water diversion structures were activated with a number of problems. Structural design flaws and poor workmanship resulted in not meeting the stipulated stream flow agreement. The contractor has corrected some of the workmanship problems.

Federal reserve water rights negotiations with the State of Montana continued with special emphasis on protection of the park's geothermal system and minimum in-stream flow of Soda Butte Creek.

GIS

GIS capabilities and production continue to expand in 1992. Through the efforts of George McKay, the park was able to obtain over \$300,000 of compatible equipment from the regional office to integrate into the GIS system of Yellowstone. George McKay was loaned to the southeast region for a project at Gulf Islands National Seashore. The conservation data center was begun in cooperation with the Nature Conservancy and Grand Teton National Park. Severe space limitations for the CDC and the GIS operation continue.

General Section

Resource Management continued to be involved with the State of Montana in a Watchable Wildlife program.

Resource Management staff attended the wildlife restraint and biological sampling collection course.

Resource Management organized and completed a carcass/bear utilization surveys in the Firehole River and Swan Lake Flats Bear Management Areas. This is in connection with the interagency grizzly bear study team. Resource Management helped organize a pilot wildlife disease sampling program with Sharon Taylor, DVM from Washington Office, NPS.

Participated in public hearing meetings on the draft alternatives wolf EIS. Also reviewed and prepared the documents for inclusion into the Wolves For Yellowstone, Volume 3 and 4 which was a report to be submitted to Congress. Sponsored a park meeting and update on Nathan Varley's study of mountain goats.

Bighorn sheep surveys were conducted in cooperation with Montana Fish Wildlife and Parks and the U.S. Forest Service, Gardiner Ranger District.

A disproportionate amount of time was spent by resource management staff in reviewing external and internal documents assessing wetlands, threatened and endangered species evaluations, and general assessments for proposed developmental projects in the park. These developments included Hudat, Lake, Bridge Bay, DCP, road reconstruction projects, U.S. West telephone upgrade, and infrastructure upgrades.

Resource management trainee Laurie Lee was in her second year of a three year training program and was assigned work projects in AML, backcountry management plan preparation, as well as, a number of other assignments.

A cooperative student program was initiated with Colorado State University and the first participant, Carl Cordova, began summer employment with the Snake River District under RMC Tom Olliff.

A land exchange was finally effected for the sixteen plus acres across from the Gardiner airport in a three way trade with the BLM and the Montana Department of Lands. That means that only one inholding remains inside the authorized boundaries of Yellowstone National Park and that is the Gardiner Cemetery at boothill.

RESEARCH DIVISION

Yellowstone National Park is administered as a natural area unit of the National Park system. The objective in such areas is to preserve natural environments and native biota as integrated wholes, or ecosystems, for their scenic, educational, cultural, and scientific values. The preservation of nature for these values is enhanced by research that 1) produces basic reference information on the park environment, its biota, and the ecological processes that shape and maintain the landscape; 2) identifies social or resource problems that require the attention of park management; and 3) documents and evaluates the results of management actions to preserve or restore natural conditions.

Research in support of these goals is carried out by a legion of National Park Service and independent scientists. In 1992, Yellowstone hosted 308 research projects involving 487 principle and coinvestigators, 73 universities and foundations, 12 federal agencies, 7 state agencies, and 3 corporations. These projects included the entire spectrum of scientific disciplines: 71 in physical sciences; 68 in forest, range, and plant ecology; 59 in assorted wildlife topics (with another 17 on wolves and 13 on bears); 39 aquatic studies; 29 in microbiology (Yellowstone's geothermal ecosystem is of world interest); and 12 more in assorted prehistoric, historical, and sociological subjects. The majority of these projects (58 percent) were undertaken by university and other agency scientists with their own funding sources. A total of 131 projects (42 percent) are carried out by the NPS as either contract studies to universities or by agency scientists. Many of these are cooperative projects involving both agency and non-agency investigators. A summary for 1992 research projects is attached.

Yellowstone has 15 researchers plus supporting personnel dedicated to work in the biological and physical sciences. Its annual science budget over the past five years has ranged between \$1.5 and 3.9 million dollars. Researchers from the NPS focus on what has traditionally been known as "mission-oriented" research, that is, research aimed at clarifying the scientific realities of specific resource management issues.

Public, media, and political interests continue to focus to a great extent on Yellowstone's resource issues. The medium and long-term strategy for dealing with these issues commands a strong and viable scientific function. Preservation of endangered species in the Greater Yellowstone Ecosystem, including grizzly bears and wolves, remains the largest single commitment of research funding. Fire-related projects amounted to 25 percent of the years research activities. Research in Yellowstone's geothermal ecosystem continues as a source of genetic information providing the biotechnology industries with discoveries such as Thermus aquaticus, a primitive bacteria with high temperature enzymes which revolutionized DNA technology. This ecosystem is also providing NASA scientists with data for their study of the planet Mars, including a search for extraterrestrial life.

SUPERINTENDENT'S CHAPEL COMMITTEE

The following is the status of Yellowstone Park Chapel Committee's funds for calendar year 1992.

Savings	\$2,331.95
Checking	1,208.85
Outstanding Income for 1992:	
Rental of chapel to the Winter Ministry (19 services at \$10)	190.00
Rental of chapel to the Summer Ministry (13 services at \$10)	130.00
Rental of chapel to St. Anthony's Catholic Church (10 services at \$10)	100.00
Weddings (2 unpaid at \$50)	<u>100.00</u>
Total 1992 Outstanding Income	\$ 520.00

Income for 1992:

Rental of chapel to the Winter Ministry (19 services at \$10)	\$ 190.00
Rental of chapel to the Summer Ministry (16 services at \$10)	160.00
Rental of chapel to St. Anthony's Catholic Church (9 services at \$10)	90.00
Rental of chapel for weddings/meetings (15 weddings at \$50)	762.00
Interest earned on savings account	<u>93.64</u>
Total 1992 Income	\$1,295.64

Expenditures for 1992:

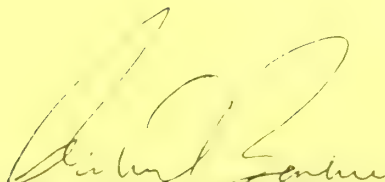
Cleaning of the chapel	\$ 450.00
Organ tuning	<u>111.00</u>
Total 1993 Expenditures	\$ 561.00

NON-CIRCULATING BOOK
MUST BE USED IN LIBRARY

SUPERINTENDENT'S ANNUAL REPORT

YELLOWSTONE NATIONAL PARK

1993



Robert D. Barbee, Superintendent

TABLE OF CONTENTS

<u>DIVISION</u>	<u>PAGE</u>
Administration	1
Concessions Management	5
Interpretation	10
Maintenance	22
Public Affairs	34
Resource Management Operations and Visitor Protection	43
Yellowstone Center for Resources	52

ADMINISTRATION

Information Systems Management (formally Telecommunications/ADP)

Telephone Service

This past year, the second and final phase of the new government telephone system was completed. The new system consists of an effective mixture of a government owned PBX system, leased Centrex Services, and business lines. The new configuration provides direct access to the FTS2000 network for nearly all locations. Our ability to restrict and control toll calls/misuse and abuse has been improved significantly.

The new system has reduced costs as anticipated, however, the system and its complexity continues to grow as we support new requirements. Most of the predicted cost savings are being reinvested in providing new/additional services.

Yellowstone's workload in telephone management and system administration continues to grow. We now are responsible for moves changes and programming formally accomplished by US West. Our role in planning new systems and evaluating new technologies such as modem services, wide area networks, telecommunications devices for the deaf, video conferencing, and sophisticated alarm systems now occupies a significant amount of time.

US West's three new switching centers and upgraded microwave system has accomplished much to significantly improve reliability and service. US West has relocated their local manager to Cody, Wyoming, and more than doubled his previous workload. This reduced commitment to the park is a serious concern.

Radio System Planning

In April 1993, the National Telecommunications and Information Administration (NTIA) issued a directive requiring all agencies to convert their radio systems to a new narrowband technology by the year 2005; this mandate has initiated major radio system planning efforts servicewide. Yellowstone's radio system is no longer adequately providing for the requirements of the park. Efforts are now underway to identify and document our requirements and to develop a plan for implementing a new system that would meet our requirements. Preliminary cost estimates suggest the conversion will cost about \$2,000,000.

Alarm and Security Systems

The park-wide alarm system continues to grow. Additional TWRS buildings and NPS buildings were added to the system this past year. Several of our technicians have received formal training on this equipment. Reliability of these systems is good, and

false alarms are uncommon.

Automatic Data Processing

Use of computers and automated systems continues to grow; approximately 210 personal computers are on line. Networking and electronic mail are widely used and growing. Emphasis is on wide area networks and electronic mail to serve park interior locations. This past year, the ADP staff successfully completed an effort to computerize the backcountry permit process for Mammoth. This involved writing/developing software and designing a system that will be expanded to serve other offices in the park.

The park's centralized Datapoint system will be phased out by the end of FY 94. Personal computers are now used for nearly all functions. User training and support continue to be a major part of the ADP workload.

Fiscal

The following are the budget figures for FY 93:

ONPS Base Funding	\$14,778,000
Fee Money	2,607,000
Special Funding	2,101,000
School Funding	630,000

The special funding includes money received for public health, VIPs, drug prevention, air quality, cyclic, repair/rehab, Wolf EIS, Fire Recovery, etc.

Personnel

A total of 59 vacancy announcements were issued during the year.

Briefings pertaining to changes in seasonal employment processes were held at six locations within the park.

Two staffing personnel participated in a job fair on the Wind River Indian Reservation.

All labor disputes were settled locally and informally. No grievances advanced to formal proceedings.

Patty Kremer was hired as the new Personnel Actions Clerk.

Odd Osteros, Classification Specialist, arrived in February 1993.

Intake Trainee Susan Kraft was hired as the park Curator and

Intake Trainee Laurie Lee was converted to the position of Resource Coordinator for the Grant area.

Procurement

1993 was a very active year with 5 new contract awards and a total of 36 contract (modifications) actions processed with a dollar value of \$715,000. Advance acquisition plans were not requested by the Regional Office, therefore no special emphasis goals were established. One contract, Big O Construction, a disadvantaged business, accounted for \$133,295 or 18% of the contract expenditures.

Four new Interagency Agreements, three new Cooperative Agreements and one Memorandum of Agreement were established during the period.

Yellowstone requested Qualification Statements for three indefinite quantity Architect-Engineering contracts including Historical Structures, Utility Systems, and Multi-Discipline Architect-Engineering services. Upon evaluation of the qualification statements, three Indefinite Quantity contracts for these services will be awarded in FY 94.

Small purchases:	Quantity	Dollar Amount
Purchase orders	1,427	\$3,226,985.00
Blanket Purchase Orders	45	384,036.84
Third Party Drafts	2,002	497,666.70
Imprest Fund	736	29,509.45
FEDSTRIPS	203	188,708.00

The Procurement and Contracting branch underwent an Acquisition Management review performed by Chief of Contracting, RMRO, James D. Clark. The summary report stated that, overall, the park had a good solid procurement operation.

Supply Center

The Supply Center continued to provide quality customer service during the period. The annual physical inventory revealed a net loss of only \$3,853 on sales of \$1,000,920.

Recycling efforts included baling of 66 bales of corrugated cardboard.

Property Management

The National Park Service underwent an audit by the Department of Interior's Office of Inspector General. Auditor Peter Rich spent about three days in Yellowstone National Park performing the

audit. All items randomly selected from a statistical analysis were located and accounted for.

The Property Utilization Specialist assisted in obtaining several excess vehicles from the numerous military bases. Excess property was disposed of as an ongoing process. The annual GSA auction this year disposed of 197 line items netting over \$160,000.

	<u>NPS</u>	<u>TWS</u>
Reports of Survey	101	38
Report of Excess Property	8	1
Report of Excess Property for Sale	38	22
Transfer of Property	18	0

Acquired excess property valued at an estimated \$484,172.29.

Annual quarters rates (CPI adjustments) were implemented February 21, 1993; form 10-374 Housing Inventory were updated.

Physical inventory of capitalized property was conducted over the summer for FY-93.

Current Property Status:

	<u>Number of Items</u>	<u>Value</u>
NPS	10,111	\$17,871,389.58
TWS	3,405	5,039,970.16

CONCESSIONS MANAGEMENT

TW Recreational Services

The TW Recreational Services (TWRS) contract (renewed for 10 years on November 1, 1991) requires TWRS to invest \$8 million into rehabilitation projects and new construction in Yellowstone during the first 3 years of the contract. The concessioner is also required to invest 10 percent of their annual gross revenue into a Capital Improvement Account and an additional 10 percent into a Cyclic Maintenance Program. To date, projects completed under this contract include renovation of guest rooms and public areas in the Old Faithful Inn's east and west wings; removal of deteriorated employee cabins at Old Faithful, and construction of a 70-room dormitory, employee recreation facility, and transportation maintenance facility--all at Old Faithful.

Recently, the Roosevelt Lodge Historic Structures Report was finalized and approved by the Wyoming State Historic Preservation Office. The plan recommends a number of actions to be taken at Roosevelt Lodge which are to be accomplished including relocating compatible cabins from other areas in the park to be used at Roosevelt for employee housing, historic preservation work on the lodge building, and restoration work on historic guest cabins.

Yellowstone's Winter Use Plan, approved in 1990, identified NPS objectives and determined what concession facilities and services are appropriate for winter use. Following recommendations of this plan, the National Park Service (NPS) and TWRS recently began planning the construction of a new Snow Lodge at Old Faithful. The existing lodge, which was originally constructed in 1958 as an employee dormitory, is poorly designed for guest use and is incompatible with the Old Faithful Historic District. This spring, a thermal flight of the Old Faithful area will identify thermal activity in the area and enable the NPS to determine an appropriate location for construction of the new lodge. The new facility will be historically compatible and energy efficient. The lodge will include overnight lodging, a dining room and fast food operation, a lounge, and gift shop. The existing Four Seasons Snack Shop will be also be removed.

In 1994, TWRS' contract was amended to authorize them to operate four NPS campgrounds. The amendment requires TWRS to invest 20 percent of the gross revenue generated from campground operations into a Campground Account. This account will be used to upgrade and maintain the assigned campgrounds. TWRS will invest an additional \$600,000 over the next 3 years for campground improvements.

The Chief of Concessions Management is currently working on a TWRS contract amendment which will result in TWRS investing approximately \$3.5 million to replace inferior lodging units with new lodge rooms at Canyon Village.

Hamilton Stores, Incorporated

Hamilton Stores, Incorporated (HSI) is continuing with their sign improvement project throughout the park. In addition, HSI constructed a new parking lot at their general offices in West Yellowstone, removed employee dormitory rooms from above the general offices and added additional offices, constructed a new apartment complex in West Yellowstone for their employees, constructed a new maintenance shop in West Yellowstone, and converted the existing maintenance shop at West Yellowstone to a conference/orientation center. In addition, they are finalizing a \$400,000 landscape project at Canyon Village.

Yellowstone Park Medical Services

The contract between West Park Hospital, dba Yellowstone Park Medical Services (YPMS), and the NPS was renewed for 10 years on January 31, 1993. The new contract requires YPMS to invest over \$1 million dollars for new construction, remodeling, and equipment purchases.

Plans are currently underway for construction of a new clinic/ranger station complex at Old Faithful. Construction will begin this summer.

YPMS has also submitted plans for construction of new employee housing at Lake. Construction will begin this summer.

YPMS recently completed remodeling the x-ray room at Lake Hospital and purchased and installed new x-ray equipment.

Preliminary plans have also been submitted for interior remodeling of the Mammoth Clinic.

Yellowstone Park Service Stations

Yellowstone Park Service Stations recently purchased new vehicles and equipment for use in the park including a 1-ton warehouse truck, 1-ton maintenance truck, and a suburban. Plans are underway to remodel service station restrooms at Canyon, Tower, and Old Faithful. The remodeled restrooms will meet ADA requirements.

Firebox, Incorporated

The NPS was notified on May 5 that Mr. Scott Daniels, the owner/operator of Firebox, Incorporated, had resigned from the

company and that he had sold all associated assets. Mr. Daniels has been notified that he has violated the terms of his concessions permit and that he will not have a preferential right of renewal when the permit is renewed. Concessions Management is proceeding with plans to ensure that firewood will be available to park visitors this summer.

Snowcoach Permits

The Concessions Management Office has drafted a prospectus to renew snowcoach permits. The prospectus is being reviewed by the Regional Solicitor. Currently, five operators provide oversnow transportation services using tracked-oversnow vehicles. The Winter Use Plan recommends modest increases in the number of snowcoaches or tracked vehicles to encourage public use of mass transportation versus private machines.

Snowmobile Permits

A prospectus has been prepared to authorize guided snowmobile operations under concession permits. This document is also being reviewed by the Regional Solicitor. Currently, seven operators are authorized under commercial use licenses for these commercial services.

In order to enable the NPS to limit the number of guided snowmobile authorizations, it has been determined that these operators should be authorized under concession permits rather than commercial use licenses.

In addition, a prospectus is under legal review for renewal of 11 snowmobile permits entering from the South Entrance.

Moratorium on Commercial Use Licenses

In December 1993, a moratorium was placed on the issuance of additional commercial use licenses in Yellowstone. The moratorium will allow the NPS to review existing licenses and determine whether authorized commercial services are necessary and appropriate for visitor enjoyment of the park and how they impact the resources of the park. Current licenses authorize such activities as fishing, boating, bicycling, hiking, photography, transportation services, auto tours, and cross-country skiing.

Concessions Evaluation and Rate Approval Program

All concessioners in Yellowstone received satisfactory ratings in 1993 for operations, contract compliance, building programs, safety, and public health.

All concessioner rates were approved based on comparability studies in communities adjacent to the park. In many categories, concessioner rates were lower than private enterprise.

Visitors continue to received exceptional services from Yellowstone's concessioners at reasonable prices.

Concession Operational Statistics

TWRS

TWRS served 1,636,110 meals to park visitors during the 1993 summer season and 86,173 meals during the winter season.

603,260 guests stayed overnight in TWRS facilities during the summer, and 31,750 overnight guests were reported during the 1993-94 winter season.

HAMILTON STORES

Hamilton Stores reported an increase in sales of approximately 1/2 percent from 1992 to 1993.

YELLOWSTONE PARK MEDICAL SERVICES

Mammoth Clinic

Patient Visits: 6,778

Employee Health Care Program Visits: 1,167

Old Faithful Clinic

Patient Visits: 1,972

Winter: 28

Employee Health Care Program Visits: 1,084

Lake Hospital

Patient Visits: 3,556

Employee Health Care Program Visits: 1,515

Yellowstone Park Service Stations

YPSS sold 2,460,908 gallons of gasoline in 1992 compared to 2,490,524 in 1993.

	<u>1993</u>	<u>1992</u>
<u>TW Recreational Services, Inc.</u>		
Gross Receipts	36,481,550	34,545,661
Net Income	2,771,099	2,578,047

Hamilton Stores, Inc.

Gross Receipts	19,674,552	19,572,403
Net Income	2,479,602	2,422,505

Yellowstone Park Medical Services

Gross Receipts	971,848	807,394
Net Income	12,227	63,692

Yellowstone Park Service Stations

Gross Receipts	4,127,772	4,184,341
Net Income	521,463	462,670

INTERPRETATION

BUDGET

The ONPS base for Interpretation in FY 93 was \$766,400. With the addition of \$137,795 in fee enhancement monies, the total NPS budget for the division came to \$904,195 -- 5.2% of the parkwide budget. The Division of Interpretation also received \$1,100 in Volunteers-In-Parks funds, cooperating association donations of \$100,059, and other donations totalling \$101,156. Thus the total of all funds received by the division in FY93 was \$1,106,510.

The Yellowstone Association (YA) continued to provide major support of interpretive services in the park. In addition to their \$30,000 general donation for interpretive operations, YA funded \$70,059 of special interpretive projects including Norris exhibit planning, trailhead wayside exhibit planning, new foreign language brochures in German and Japanese, the Canyon geology exhibit, the Yellowstone Today interpretive insert, the Artists-In-Residence program, slide file cataloguing, and computer purchases for the Division of Interpretation.

YA continued their support of the Research Library, paying salaries for two part-time librarians and purchasing materials and magazine subscriptions. The Association also continued to distribute trail guides and "Discover Yellowstone", and assisted with handling funds for the Junior Ranger program. Perhaps YA's greatest contribution, once again, was the invaluable help of book sales assistants working the park visitor centers.

PERSONNEL

Many significant personnel changes took place in the division during FY 93, essentially completing the reorganization of the division initiated by Chief of Interpretation, Ron Thoman.

Through the summer season, the division operated under the previous year's organization with two district naturalists (Joe Halladay, South District, supervising Old Faithful/Madison, Grant, and Fishing Bridge sub-districts; and Greg Kroll, North District, supervising Mammoth Hot Springs, Norris, Canyon, and Tower/Roosevelt sub-districts.)

Linda Young continued to supervise the media interpretation function with the addition of an audio visual technician position, filled by Ron Harvey, which was transferred to interpretation from the telecommunications office. Park historian, Tom Tankersley, transferred to the new Center for Resources taking the curatorial function with him. Responsibility for the research library and archives function remained with the interpretive division; Lee Whittlesey served as archivist.

Mammoth sub-district naturalist Steve Eide resigned in July, and his position was lapsed for the remainder of the year. Once again, the environmental education position was filled temporarily by Rich Jehle. The former Old Faithful sub-district naturalist position was abolished. Dave Cowan was formally detailed from the exhibit specialist position to oversee the Yellowstone arts program; Diane Papineau, funded by the Yellowstone Association, took over responsibility for exhibit development.

By October 1, a major realignment of responsibilities was made. The old district naturalist positions were abolished. Three assistant chief naturalist positions were established: operations, under Tom Tankersley (who returned to the division), with responsibility for all field operations and staff: interpretive planning and media development, under Linda Young, with no significant change in duties; and support services, under Greg Kroll, with responsibility for division administration and coordination with other divisions, the Yellowstone Association, and other agencies. The former sub-district naturalists, now district naturalists, were given more responsibilities for their districts and report directly to the assistant chief for personal services.

The Division of Interpretation had a total of 60 employees utilizing 28 FTEs in FY 93. There were 14 permanent positions (12.63 FTEs) and 46 temporary positions (15.37 FTEs). This represents 6 percent of Yellowstone's total FTEs. In addition, the division utilized 61 volunteers-in-parks (VIPs) for a total of 2.63 FTEs, and 66 other positions (interns, YA-funded employees, etc.) for a total of 9.83 FTEs.

VIP PROGRAM

The Volunteers-In-Parks (VIP) coordinator responsibilities were transferred to the Division of Administration in 1993.

ENVIRONMENTAL EDUCATION

In 1993, the *Expedition: Yellowstone!* environmental education program was supervised by field coordinator Rich Jehle. The program was divided into two seasons: spring (April-May) and fall (September-October). Each season utilized three seasonal employees in addition to the field coordinator and volunteers. During 1993, 593 students and 148 adults (teachers and chaperones) participated in the program. The visits of 26 schools were organized, planned, and coordinated through this program. Eighty percent of the classes were from the three surrounding states: Wyoming (11 schools), Montana (6), and Idaho (4). Three schools came from Utah and one each came from Kentucky and Missouri.

Yellowstone National Park's Junior Ranger program was again offered during the summer. The program consisted of an activity paper, which sold in visitor centers for \$1, with a patch awarded to the

children who successfully completed the activities as prescribed in the newspaper. The program was targeted for children ages 5-12. The Junior Ranger program again proved to be very popular with park visitors.

An \$18,000 grant was secured from the Parks as Classrooms program to develop an educational unit on water for *Expedition: Yellowstone!* The unit will be developed by Western Water Course, Inc., of Montana State University, via our cooperative parks study unit agreement with them. The educational unit will be authored by former Chief of Interpretation, George Robinson.

BRANCH OF INTERPRETIVE PLANNING, MEDIA, SPECIAL PROJECTS

Throughout 1993, this Branch of the operation moved into new media development and planning projects while continuing to produce a wide range of nonpersonal interpretive services as well as coordinate and operate the *Imagine Yellowstone* student art exhibit and the three month Artist-in-Residence Program at Madison Museum.

Staffing

Staffing changes brought new functions and responsibilities to the Branch's operations. In January, the Audiovisual Specialist position, GS-0856-09 held by Ron Harvey, was reassigned to the Division of Interpretation and, specifically, to the Branch. A special grant from the Yellowstone Association funded a position to assist with the development of the Trailhead Wayside Exhibit Plan and the Norris Geyser Basin Museum Plan. Diane Papineau was selected for that position.

Dave Cowan occupied the Exhibits Specialist position (Park Ranger GS-025-07) until October, when he was detailed for one fiscal year to develop a plan for a self-supporting Arts program. During the three month operation of the Artist-in-Residence Program, Dave supervised three part-time docents at the Madison Museum (funded as part of the YA special grant for the Program). Diane Papineau's position grew to assume the larger role of Acting Exhibits Specialist in Dave's absence. Ginny Cowan continued as Publications Specialist (Park Ranger GS-025-07), and Jim Peaco continued as Park Photographer/Photographic Collections Manager (GS-025-07). A special grant from the Yellowstone Association funded a part-time position in Jim's operation to assist with photo collection management projects. Linda Young continued to supervise and manage the overall Branch operations. During a September reorganization of the Division, her position title became Assistant Chief, Interpretive Planning, Facilities and Media (Supervisory Park Ranger GS-025-11).

Interpretive Media and Visitor Use

Interpretive media continued to reach virtually every park visitor at least once, and usually were encountered several times, during a typical visit. The following statistics document visitor use of various media during 1993:

Park Newspaper - annual distribution 920,000
Winter Snowmobile Guide to Yellowstone - 30,000
Yellowstone Guide (mailout trip planning publication) - 40,000
Trail Guide leaflets (Upper Geyser Basin, Canyon, Mud Volcano, West Thumb Geyser Basin, Norris Geyser Basin, Fountain Paint Pot, Mammoth Hot Springs) - 1,000,000 total
Discover Yellowstone (magazine of interpretive activities schedules) - 25,000
Dayhike Sampler - 15,000
Site Bulletins (variety of subjects/regulatory concerns) - 180,000+
Junior Ranger activity publication - 8,100
Museum/Visitor Center exhibits - 1,825,584
Wayside Exhibits - 2,900,000+
Photographic Services - 1,477
Artists-in-Residence - 10,300

Planning

The Annual Interpretive Program Report was prepared for 1993. A major revision and expansion of the Interpretive Prospectus was launched by a series of onsite studies throughout the park, research into historical interpretive planning documents, and a review and analysis of all relevant park planning documents. Three interpretive media/facility projects were submitted to Rocky Mountain Region's Repair/Rehab Program, and production of the Norris Geyser Basin Museum exhibits was funded by that source. Several publication projects were submitted for consideration under the Challenge Cost Share Program; decisions regarding their status had not been announced by the end of the year. The Yellowstone Association provided special grants for exhibit and publication projects. Those will be described in their respective sections.

Publications

Four issues of the park newspaper, *Yellowstone Today*, were produced. A special supplement to the summer edition of the newspaper was written, designed, and produced. Revisions of various degrees were undertaken with the following publications: the *Yellowstone Guide* (a mailout trip planning newspaper), the *Yellowstone Winter Guide*, seven self-guiding nature trail leaflets (Upper Geyser Basin, Fountain Paint Pot, Norris Geyser Basin, Canyon, Mud Volcano, West Thumb, Mammoth Hot Springs), the *Dayhike Sampler*, *Yellowstone Tracks* (the Junior Ranger activities newspaper), and 13 site bulletins spanning a variety of natural and cultural resource topics as well as orientation information. Two

new publications were produced -- foreign language translations of the park folder/map into a Japanese and German version. This project was accomplished with a production grant from the Yellowstone Association, and project guidance was provided by staff of the Division of Publications at Harpers Ferry Center. A Horace M. Albright employee development grant allowed Ginny Cowan to travel to HFC for onsite instruction as well as attend Interpretive Skills IV training at Mather Training Center.

Publications in early stages of development by the end of the year included a French translation of the park folder/map, a tear-off map of Yellowstone and Grand Teton National Parks, and a special tabloid format publication updating information and interpretation of the 1988 Yellowstone fires. Finally, we continued to develop a new HFC Handbook for Yellowstone National Park.

Exhibits

South and West District wayside exhibits were installed by maintenance crews. A few exhibits along the East Entrance road and the Madison to Biscuit Basin road were not installed due to upcoming road work and concerns about possible damage to expensive exhibit panels. Winter wayside exhibit panels were produced, but the supporting hardware had to be redesigned to meet varying snow depth situations that will exist when these are installed. Trailhead wayside exhibit planning resumed in conjunction with Ranger and Resource Management staffs. By year's end, map compilations were underway and text development was beginning.

A major rehabilitation of the Canyon Visitor Center interpretive media moved into conceptual planning stages. Following a site visit in May by HFC staff Jim Mount, Betsy Erhlich, and Grant Cadwallader, floor plan options were analyzed and interpretive themes, goals and objectives were developed. Options for treating various components of Yellowstone's geologic story were identified and conceptually treated in a variety of exhibit and audiovisual formats. Final floor plan decisions and full scale planning will take place in 1994.

The *Imagine Yellowstone* student art exhibit was displayed in the Albright Visitor Center and again was well received by visitors. All involved agreed that this space is not well suited to such an exhibition, and Canyon Visitor Center will be the location of the 1994 exhibit.

Photography/Video Services

Demand for a wide range of photographic and video services continued to exceed by far our ability to respond. Among the special events photographed by the park photographer were the 100 millionth visitor commemorative ceremony, the Fire Symposium sponsored by the Yellowstone Center for Resources, annual division-

wide interpretive training, and resource management training. At the request of the Superintendent's Office, Jim prepared an extensive album visually documenting the condition of employee housing for a special funding initiative, and photographed virtually all interpretive media and facilities as documentation for the revised Interpretive Prospectus and various funding proposals. As has been the case for more than a decade, the number of individuals using the photographic collections for a wide range of purposes set a new record - 1,477 contacts with needs ranging from a single slide to full scale assistance with all image needs for the Norris Geyser Basin Museum and Trailhead Wayside Exhibit projects.

Audiovisual Technical Services

As previously mentioned, the Audiovisual Technical Specialist position became part of the Branch operation in January. Much of the year was spent in securing new office space, ordering furniture and equipment to make it operational, moving an entire audiovisual cache of equipment and supplies, organizing the new space, and providing ongoing technical support for Yellowstone's audiovisual infrastructure. This included maintaining and troubleshooting automated programs in eight visitor center/museum facilities, maintaining audiovisual systems in seven major campground amphitheaters, responding to requests for audiovisual assistance for all park offices for training, seminars, workshops and the like, and providing specialized assistance for events such as the 100 millionth visitor ceremony and Fire Symposium. In addition, Ron Harvey traveled to Glacier National Park twice to install new audiovisual systems in different areas of the park, and traveled to Little Bighorn National Battlefield to troubleshoot a malfunctioning system at their visitor center.

Artists-in-Residence Program

The Artists-in-Residence Program was conducted once again in Madison Museum. Funding was provided by a Yellowstone Association special grant. From June through Labor Day, 12 artists provided public activities of various types, and docents staffed the Museum and contributed programs/activities as well. Approximately 25,000 visitors passed through the Museum; program attendance totaled 10,300 for the summer.

Imagine Yellowstone

For the fifth consecutive year, the *Imagine Yellowstone Art and Writing Festival* was displayed in the Albright Visitor Center. Entitled "The Greater Yellowstone Ecosystem", 470 entries were received, and 48 pieces were exhibited. This annual show continues to grow in popularity.

Native American Speaker Series

Thanks to a \$5000 grant from the Wyoming Council for the Humanities and administrative support from the Yellowstone Association, Yellowstone presented a Native American Speaker Series entitled *Yellowstone: Through American Indian Eyes*. Between late June and early August, each of the Native American speakers gave three performances throughout the park. Over 5000 visitors attended a total of 18 programs. A list of each speaker and his/her program follows:

Jeanne Eder:	"Waheenee: Buffalo Bird Woman"
Merle Haas:	"Learning from the Animals"
Alma Snell:	"Native Use of Plants"
William Tall Bull:	"Sacred Places"
Otis Half Moon:	"Flight of the Nez Perce"
Walter Fleming:	"Native American Art"

Training

Linda Young coordinated annual division-wide interpretive training, which was held June 1 - 5 at the YCC hall. Yellowstone Association employees joined the group for the first day, and park staff from a variety of offices, TW Services employees, and employees from nearby federal/state agencies sat in on sessions during the week. The training theme, "Back to Basics," was articulated by Ron Thoman in his first address to the entire division as Chief of Interpretation, and training content was developed with an emphasis on interpretive and information "basics." Skill sessions focused on the visitor center information desk function, roving interpretation, planning and presenting walks and talks, Tilden's principles, and critical/sensitive issues interpretation. A broad spectrum of natural and cultural history topics plus management issues and concerns were covered by park staff and other subject matter experts.

Linda also continued involvement with the Rocky Mountain Region Orientation training program by training new facilitators for the FY 94 program. The Rocky Mountain Region Interpretive Skills Team offered an Interpretive Writing course which failed to attract enough participants to pay for the cost of conducting the training, and Interpretive Operations for First Line Supervisors, which was successfully conducted in Estes Park in September. Two Yellowstone interpreters, Rich Jehle and Carol Shively, attended this course.

Training specific to the needs of the Branch staff continues to be difficult to obtain. An effort launched by NPS staff in the Mid Atlantic Regional Office to conduct a service-wide desktop publishing workshop received enthusiastic support from the Branch and Yellowstone Association staffs. As of year's end, the goal was to announce the workshop for September 1994.

ARCHIVES, LIBRARY, AND HISTORIAN'S OFFICE

Due to a reorganization of natural and cultural resource functions in the park, the Archives, Library, Historian's Office and the Curators Office were effectively removed from the Division of Interpretation in March and placed within the newly created Yellowstone Center for Resources. In October the Historian position was reassigned to the Division of Interpretation and redefined as an Assistant Chief of Interpretation with responsibility for management of interpretive operations. At the same time, the management of the Library and Archives was returned to the Division of Interpretation. The Curator's office remains within the Yellowstone Center for Resources.

The Yellowstone Archives presently houses approximately 1,200 linear feet of records which have been organized into thirteen series and stored in a high density mobile shelving unit. Through a cooperative agreement with the National Archives and Records Administration, the Yellowstone Archives was established in 1978 as a branch of the National Archives. Accordingly, representatives of the National Archives performed their annual inspection of the Yellowstone Archives on September 20. A report from Assistant Archivist Raymond Mosley was prepared and sent to the park reflecting satisfaction and compliance with professional standards for archival management and the cooperative agreement. Of particular importance to the management of the archives was the funding (Type 38, CRPP) to hire an archives technician for the continued organization and management of archival material. This effort had been initiated in 1992 and resulted in the continued employment of Lee Whittlesey for this purpose. The Assistant Chief for Interpretive Operations maintains supervisory control over the archives and was placed on the National Park Service Archives Advisory Committee and participated as an active member of this committee during the year. The Yellowstone Archives continued the archives intern program initiated in 1992 and during the summer months had two Montana State University interns perform box level maintenance and descriptions for two record series within the collection. Assistance to researchers was provided through approximately 200 searches during the year and the preparation of approximately 200 written responses to inquiries.

There was no turnover in the librarian positions. Operating during the existing half day schedule, the library served approximately 2,500 people. Records indicate that over the past five years the percentage of NPS to General Public use has shifted from 60 percent NPS to 60 percent general public. The increased use of the library and archives and shift to a higher majority of general public use has resulted in escalating recognition of both the library and archives as premier collections.

DISTRICT OPERATIONS

As previously mentioned, the former two districts (with their six sub-districts) were eliminated in the fall of 1993. The former sub-districts are now districts that report directly to the Assistant Chief of Interpretation, Personal Services. The following information, however, reflects the organization of the division throughout the summer before the changes were made.

Mammoth Hot Springs

The summer interpretive staff consisted of the sub-district naturalist, Steve Eide, five seasonal employees, one Student Conservation Aid (SCA), a full-time VIP (Argentine Javier Wasserzug), and several part-time VIPs. Steve Eide resigned his position in July, leaving district naturalist Greg Kroll in charge of the sub-district.

During the summer, campfire programs were offered nightly at the Mammoth campground; for the first time in several years, however, no programs were offered at the Mammoth hotel, or at the Indian Creek Campground.

The functioning of the Mammoth Visitor Center was greatly improved by the relocation of the backcountry desk to an office accessed off the visitor center porch; the former desk location was converted into the Yellowstone Association sales counter relieving crowding and lowering the noise level in the visitor center.

Mammoth had one winter seasonal employee. Winter interpretive activities included three evening programs per week at the hotel and guided walks at the Hot Springs terraces.

Only one summer seasonal was present at Tower/Roosevelt again this summer providing five days of interpretation per week. This individual gave campfire programs at both Tower and Pebble Creek Campgrounds, increased roving time over previous years, and still managed to provide five different daytime programs per week.

Norris

The Norris summer interpretive staff consisted of sub-district naturalist Sandy Snell and three seasonal employees. The Museum of the National Park Ranger was principally staffed by volunteers; retired National Park Service employees from throughout the country who generally did an excellent job and enjoyed the experience. Norris offered a variety of daytime programs interpreting geology and local history. Campfire programs were given at Norris Campground four nights a week.

Principally through the cooperation and labor of the Telephone Pioneers of America, the abandoned roadbed from Porcelain Basin to

the Back Basin was converted into a handicapped accessible trail. This made the majority of Norris' features handicapped accessible.

One-half of the Norris Geyser Basin museum was gutted by maintenance staff in anticipation of the installation of new interpretive panels. Thanks to a \$20,000 grant from the Regional Office repair/rehabilitation account, and \$5,000 from the Yellowstone Association, a new Norris exhibit plan was begun in cooperation with a private contractor under Harpers Ferry's task order system. \$60,000 more of regional money and another \$50,000 of YA money was earmarked for the production of the new exhibits. Programmed for production in 1994, these exhibits will result in a completely renovated museum installation for Norris.

Analysis of the conversion of the old Norris comfort station at the geyser basin into a Yellowstone Association sales outlet was initiated. It is hoped that the sales facility will be functioning by the 1995 season.

Canyon

Summer staffing at Canyon consisted of sub-district naturalist Jeannine Wagner, and five seasonal employees. The student-produced temporary geology exhibit was again featured in the visitor center.

Working out of the Canyon warming hut, the sub-district naturalist and one winter seasonal employee provided orientation and interpretation daily while Canyon was accessible to winter visitors. In order to ease congestion and safety hazards at Canyon Junction, the location of the warming hut and adjacent restrooms was moved into the parking lot in front of the visitor center.

The naturalist and ranger offices were refurbished and winterized in conjunction with the first phase of a major renovation of the visitor center in preparation for a new Harpers Ferry-produced geology exhibit which is currently in the planning stage.

Old Faithful

District naturalist Joe Halladay supervised the interpretive program at Old Faithful and Madison. In addition to the district naturalist, summer staffing consisted of nine seasonal employees. During the winter, four seasonals were employed to provide interpretive services at Old Faithful and at the Madison Warming Hut.

Joe Halladay's duty station and quarters were transferred from West Yellowstone to Old Faithful. This left no interpretive presence at West Yellowstone. It was also agreed that once the new West Yellowstone Visitor Center is opened, NPS staffing will be provided by the ranger division (instead of the interpretive division.)

Grant

Grant Village interpretive staff consisted of sub-district naturalist Roger Anderson and five summer seasonal employees. Roger also had one winter seasonal to help staff the West Thumb Warming Hut. The Grant Visitor Center continued to feature the exhibit "Yellowstone and Fire" which was returned to Grant in 1992.

New this summer was the self-guiding trail leaflet for West Thumb. In addition, the boardwalks at the geyser basin were redesigned to make them handicapped accessible. The old exhibits on the lakeshore behind the Grant Visitor Center were removed, and the maintenance division constructed benches for sixty people (funded by YA) to create a small amphitheater setting for interpretive programs. The Grant staff also developed an interpretive sign plan and produced routed directional and interpretive signs that will be installed at Grant in 1994.

Fishing Bridge

Fishing Bridge/Bridge Bay interpretive staff consisted of sub-district naturalist Carol Shively and five summer seasonal employees.

With reconstruction of the East Entrance road beginning in 1994, archeological field studies and excavations continued in the Fishing Bridge area during the summer under the direction of Ken Cannon from the Midwest Archeological Center. Many interesting artifacts were found. Ken provided a three-panel interpretive display which was exhibited throughout the summer in the Fishing Bridge Visitor Center.

New track lighting was installed in the Fishing Bridge Visitor Center.

YELLOWSTONE ASSOCIATION/YELLOWSTONE INSTITUTE

The Yellowstone Association offices moved into a fully renovated headquarters in the Chittenden House in the heart of the Mammoth historic district. This move provided significantly heightened visibility for the Association while providing an office atmosphere befitting the professionalism of their operation.

For the first time, the Yellowstone Association printed over one million self-guiding trail leaflets in 1993.

The Yellowstone Institute undertook the replacement of all of the cabins at the Lamar Buffalo Ranch facility. The director of the YI program, Don Nelson, moved his operation half-time to Boulder, Colorado. YA also established an assistant director position for the Yellowstone Institute.

MISCELLANY

The Interpretive Strategic Planning process continued on three fronts with ongoing development of the following documents: a new Interpretive Prospectus; a new Statement for Interpretation; and a new support services/long range planning document.

Interpretive headquarters in the Mammoth administration building were remodeled and new furniture was purchased.

All new interpretive supervisors attended Interpretive Operations for First Line Supervisors.

The division once again coordinated park-wide seasonal employee orientation.

At the request of NPS and the Agency for International Development, Assistant Chief Greg Kroll spent three weeks in Panamá team teaching interpretive techniques to Panamanian park administrators.

MAINTENANCE

General

The Maintenance Division's workload in 1993 focused on the park's major infrastructure problems--roads, utility systems, buildings, and housing. The main personnel change was the selection of Jack Roberts as the Assistant Chief of Maintenance. Work with removal of old hazardous materials (paint thinners, etc.) and underground storage tanks is demanding more time and focus, and the residue of 100 plus years of visitors and activity still needs much work. 1993 saw OSHA and EPA inspections, other compliance requirements such as ADA, hazardous materials abatements, and NFPA requirements affecting park operations and budget priorities. The lack of a viable cyclic maintenance program is still increasingly evident, especially in roads. Even though Craig Pass is complete, the estimate to bring the roads up to standard now exceeds \$300 million.

A recycling program continues in conjunction with our park concessioners, Hamilton Stores and TW Services. Drop-off points for glass and aluminum were established in housing areas throughout the park, and drop-off points for aluminum were set up in many of the campgrounds. In 1993, over 400 tons were recycled parkwide.

Buildings

Work on park buildings consisted of responding to critical work orders involving repairs necessary to keep the buildings open and functional. Due to base funding levels, cyclic and preventive maintenance have been deferred at least another year. Most building repair and rehabilitation accomplished this year was funded under the separately funded repair/rehabilitation and cyclic program. The remaining cyclic work was deferred, thus increasing the backlog of necessary work.

A variety of funding sources was pooled to accomplish numerous major building, utility, and housing projects. Funding sources included repair/rehabilitation and cyclic projects (rehabilitate buildings to meet NFPA - \$120,000, upgrade housing - \$200,000, paint park-wide buildings - \$110,000, housing initiative - \$180,000, rewire/rehab buildings - \$200,000, repair heating plants - \$50,000, underground storage tanks - \$159,500), and ONPS funds.

The four craft shops located in Mammoth Hot Springs were heavily involved with construction, rehabilitation, and utility projects park-wide, while keeping up with the more critical work orders that are called in daily.

Replacement of major heating components and new installations occurred in Bechler (1), Canyon (12), Lake (4), Mammoth (11), Norris (2), Old Faithful (2), and West (3). Electricians and plumbers made repairs at over 100 park-wide locations and made replacements or new installations at nearly 200 locations. 1993 also saw an increase in utility system failures, including generator failures, water and sewer line failures, and maintenance assistance was requested (and provided) of Gardiner, Montana, for their sewer line failure under the Yellowstone River.

Mammoth: The new maintenance garage in Mammoth has had considerable work accomplished, and the operation has moved to the new location. Building 75 was partially rehabilitated. The rehabilitation of Building 23 was started. Building 36, the Administration Building, had numerous repairs and remodeling projects completed. The exterior of 10 buildings and the interior of over 26 buildings were painted. Four lower Mammoth roofs were replaced by contract, 15 received various repairs, and building 27 was re-roofed.

West Entrance: A quarters unit was rehabilitated and 4 facilities were painted. Underground storage tank work in the trailer park discovered a residual leak from a long since removed system and work is ongoing.

Canyon: A new 500kw standby generator was repaired. Work began on rehabilitating the Canyon Visitor Center. A 10-plex apartment building roof collapsed and was repaired as was a ranger residence. The visitor center roof replacement was started. Replacement of one quarters roof by contract was completed.

Grant Village: Repair/rehab continues on the exterior of the visitor center, campground comfort stations, and ranger station. The Mount Sheridan Lookout was rehabilitated and re-roofed.

Old Faithful: Work continued on the new emergency services building, and major improvements to the visitor center heating system were completed. Upgrading of lift stations and other utilities continues.

Bechler: The painting of buildings continued, and an underground storage tank replaced.

Madison: The shop heating system received major renovation and is nearly complete. In a joint venture with US WEST Communications, a new stand-by generator was installed. Comfort station repair/rehab continues in the Madison Campground.

Lake: Historic maintenance occurred on the Fishing Bridge Museum such as new light fixtures, exterior staining, and work on the heating and electrical systems. Bat mitigation measures

continue on problem buildings in the Lake area. Repair/rehab work continues on Bridge Bay comfort stations, utility system buildings, and craft shop buildings. Due to limited funds and manpower shortages, work on stabilizing/preserving the Fish and Wildlife buildings has been deferred yet another year. This situation will continue to worsen until funds are available for complete restoration. Construction was completed on a new house. Major utility tie-in for Federal Highways project was nearly completed, and the Federal Highways housing (4-unit and 5-unit buildings) was approximately 99 percent complete.

Northeast: Completion of the fuel distribution system, and repairs to three roofs were accomplished.

Utilities

New standby generators were installed at Madison, Canyon, and Grant Village. This included new buildings, underground fuel storage tanks, etc. Work continues on phasing out inefficient sources of heat. Installation of electric meters on all permanent quarters and all concession trailer sites is complete. Rehab/replacement of major utility components continues in all areas which include pumps, valves, compressors, telemetry etc. The Lake Hospital fire alarm system was rehabilitated by park crews.

Fuel Storage - Underground storage tank work occurred at 6 locations in Mammoth, Bechler, Beartooth, Canyon, East Entrance, Lake (4), Madison Junction (2), Old Faithful, Northeast, and West. A major underground LP gas leak at the Mammoth YACC camp was repaired, and over 500 hundred feet of sewer line was replaced or commercially flushed.

Major water or sewer line repairs or replacements occurred in Canyon, Grant Village, Lake, Lamar, Mammoth, Old Faithful, and Stevens Creek. Virtually every water, wastewater plant, or lift station required significant repairs. Utilities park-wide are failing at an increased rate.

Housing

The quarters program continues to lose approximately \$350,000 - \$500,000 per year, and the quality of housing is very low. Over 25 percent of the units are of a temporary nature (trailers, transahomes, wingfoots) and were never intended for use in this climate. The Housing Management Plan, in conjunction with the Service-wide housing initiative, identifies a \$125 million shortfall in upgrading, rehabilitating, replacing, and adding additional housing. Interior park employees continue to live in trailers and other substandard housing throughout the winter.

Progress continued in 1993 with upgrading sub-standard conditions of park housing. The retrofiting of government buildings and quarters for energy efficiency continued (adding more insulation, high efficiency heating units installed, thermo-pane glass installed, etc.) In excess of 400 square yards of carpet were laid throughout quarters within the park interior. Apartment repair/rehab continues at Lake, Canyon, Grant Village, Madison, and Old Faithful. Work continues on both interior and exterior work on quarters. Such tasks as painting, insulating, and general remodeling is on-going as time and money allows.

As previously outlined, two houses at Norris, one house at Lake, and one at Mammoth were constructed. One house at West, two at Mammoth, and an FHWA house at Lake were completely renovated.

Roads and Frontcountry Trails

The Norris Hot Mix plant manufactured 5,503 cubic yards of MC-800 asphalt and 1,723 cubic yards of AC-10 asphalt. Federal Highways used 1,273 cubic yards of the AC-10 to prepare the Norris-Canyon road for an overlay in 1994.

A major clean-up of the boneyard at the Mammoth Transfer Station was accomplished by the Special Projects road crews. Debris was hauled to the Livingston landfill.

A drainage problem that caused the undermining of a section of the Grand Loop road between Gibbon Falls and Tuff Cliffs was corrected. A new 24" culvert was installed, existing culverts were cleaned, and fill material was placed to stop erosion. A culvert was also installed at Beryl Springs and a new ditch was dug.

A striping contract was awarded to Mark-Rite Lines of Billings, Montana. West Thumb to Biscuit Basin, Canyon Lodge parking lot and Mammoth to Norris were striped under this contract.

A chip seal coat was applied to the Grand Loop Road from the West Thumb intersection to Biscuit Basin (20 miles). The road was closed to the public and administrative travel from June 28 through July 1. The road closure worked very well with no official complaints or tort claims. Chip retention was poor due to abnormally low night temperatures. A sand seal coat was applied to sections of the road in late August.

Special Projects road crews worked with the Fire Cache in the rehabilitation of the McMinn Bench Coal Mine site. Approximately 290 cubic yards of coal dust was transported from the Boiling River parking lot to the Ice Lake Pit.

The crusher crew processed the remainder of the used asphalt at Frog Rock (6,000 cubic yards) and 75% of the asphalt at Soldier's

Pit(800 cubic yards). The Soldier's Pit operation will be completed in May 1994.

Subsurface ground water created a slump on the highway near Sheep Creek. The bar ditch was excavated, and a shoulder drain was installed. Drain pipe was installed across the road to capture and drain the water from the north slope weeping springs.

The Norris Hot Mix Plant was retrofitted to reduce dust emissions. Air Chem Laboratories of Salt Lake City performed an EPA Method 5 (Particulate emissions test) on August 4, 1993. The Wyoming Department of Air Quality also performed a visible emissions test on August 25, 1993. The Norris Hot Mix Plant passed both tests and received a permit to operate from the Wyoming Department of Environmental Quality.

In September, glasphalt was manufactured and applied to a parking lot in Mammoth Hot Springs. The Norris Hot Mix plant produced 200 cubic yards of glasphalt, substituting 3 percent of crushed glass for 1/2" aggregate. The glass, obtained from the TW Services Recycling Center, equated to 18,000 lbs. of glass or 35,555 soft drink bottles.

Federal Highways Land Program

The West Entrance road overlay project was completed by mid-summer in 1993. Plans and specifications for the first phase (Section B) of the East Entrance road were finalized, and the contract was bid and awarded in FY 93 to Washington Construction, Missoula, Montana. A 3R (overlay) project for the Norris to Canyon section including the wide road portion towards Gibbon Meadows was awarded to HK Contractors, Idaho Falls, Idaho. Work on the dig out of the failure sections began in the fall. Data gathering and preliminary design for the Madison-Biscuit Basin segment was also accomplished in the 1993 season.

Frontcountry Trails

Frontcountry trails included major reconstruction on the Canyon Red Rock Trail including reconstruction of the boardwalk and steps to the overlook. The reroute of the South Rim Trail to bypass the slide portion between Uncle Tom's and the Chittenden Bridge was completed. 1415 L.F. of boardwalk was replaced at the Old Faithful Geyser hill area. Smaller trail and boardwalk projects were also accomplished on the Canyon trail to Upper Falls and the Mammoth Hot Springs boardwalks.

Log Structures

The log structures crew helped the Fire Cache remove and reassemble the Crystal Springs cabin to the Three Rivers Junction area.

Backcountry Trails

Total accomplishments for 1993 included the following major items:

- 290 miles of tread maintained
- 812 linear feet of turnpike constructed
- 6,634 linear feet of tread reconstructed
- 483 linear feet of bridges constructed or maintained
- 1,743 hours of installing drainage devices
- 1,502 square feet of retaining wall constructed
- 1,902 hours of packing livestock

Major projects included work in the following locations: back-country trails at Mammoth, Lake, and Old Faithful, Eagle Pass, Wapiti Lake, Lynx Creek, Buffalo Fork, Lamar River Trail, Fawn Pass, Miller Creek, Yellowstone River Trail, Hellroaring, Pebble Creek, Tower Falls, Heart Lake, Big Game Ridge, Shoshone Lake (north shore), Fairy Falls, Bighorn Pass, Boundary Creek, Observation Point (O.F.), Speciman Creek (North Fork), and Bechler Meadows.

LANDSCAPE ARCHITECTURE

Design Guidelines

Design Guidelines for the park are being developed by a committee under the direction of the Supervisory Landscape Architect. Members come from varied disciplines within the park, DSC, and the Regional Office. The goal is to develop guidelines for design and construction that YNP staff, DSC/Regional staff, concessionaires, and contractors can utilize. The committee met several times through the year to determine the process and content for the Guidelines.

Resource Council

The Supervisory Landscape Architect sat on the council to review parkwide projects, establish teams, and allot resources.

Design Projects

Over sixty sign designs were produced for the park. The *Sign Standards Manual* is being updated, with a computer aided design (CAD) format. This format will facilitate future updates and reduce reproduction time and effort.

A comprehensive parking/circulation plan was created for the Mammoth Parking Committee. Parking area designs were produced for four areas in the park. A lighting plan was created for the Old Faithful Inn parking lot.

A site design for the Yellowstone Institute project at Lamar was completed including master and layout plans for the new cabins, road, and utilities.

Planting and grading plans for six residential housing units were completed. One design required extensive retaining walls, boardwalk ramps, decks, steps, and driveway layout/grading/detail plans.

Several alternative designs for the Stephen's Creek Nursery relocation project were produced and evaluated.

Site and signing designs were produced for the Lake and Mammoth Solid Waste Facility Permit Application.

Numerous smaller design projects were completed: a new logo design for the Yellowstone NP Fire Department, presentation graphics (charts, graphs, photographs, etc.), produced drawings from survey data.

FEDERAL HIGHWAYS ROAD PROEJCTS:

Parkwide Road Project Landscape Coordination

The Supervisory Landscape Architect provided parkwide landscape representation on the Road Team with involvement in planning, design, construction, and preparation of overall project coordination. This included involvement on landscape decisions and direction with RMR, DSC, and FHWA personnel. The Landscape Architect was also a member of the steering committee for roads partnership, and a member of the Peer Review Committee to evaluate proposals for our region.

Coordination of Parkwide FHLP Budget Requests

Four divisions, 18 people, and three interagency agreements were involved in budget requests for participation in four different segments of road projects (overlay and 3-R). These were coordinated and evaluated by the Supervisory Landscape Architect and sent to the Regional Office and WASO for approval.

West Entrance to Madison Overlay/Pullout Obliteration

The Landscape Architect's Office worked in conjunction with Federal Highway personnel on the revegetation of obliterated pullouts. This detail consisted of soil compaction abatement, application of native seed and plant materials, mulching to retain moisture, and distribution of logs/snags and rocks to provide plant cover. In addition, several borrow pits/staging areas were reclaimed with top soil.

Fishing Bridge to Grant Village Pull-out Revegetation

Pullouts that were previously obliterated (and required additional attention to aid in rehabilitation) received a "maintenance revegetation treatment," which consisted of the application of native seed and plant materials, mulching, and distribution of logs/snags and rocks.

Norris to Canyon Overlay

This 11.57 miles of road is to be resurfaced, restored, and rehabilitated. This project started in 1993. The Landscape Architects' Office gave a topsoil orientation to the contractors and the Federal Highways personnel. Topsoil was salvaged from the medians at Norris Junction and Virginia Cascades, and restoration of a drainage pipe installation near Elk Park used some of this topsoil. The Landscape Architects' Office monitored the project.

This road corridor was examined for potential revegetation materials/techniques that will be utilized for the 1994 project.

East Entrance Reconstruction

A Federal Highway Drilling crew excavated a road on a slope near Sedge Bay on the East Entrance portion of the Grand Loop Road. The Landscape Architects' Office monitored and oversaw the restoration of this road.

Madison to Biscuit Basin Reconstruction

A Fountain Freight Road survey and drawings were produced for the wetland mitigation plans for this road segment.

Seed Collection

Seed was collected on the East Entrance road, Tower to Northeast, Madison to Biscuit Basin, and Norris to Canyon for future road construction projects. The seed was dried, bagged, and sent to a contract seed cleaning facility as part of the parkwide seed bank procedure.

Sign Program

A record number of signs went out of the Sign Shop. 291 sign requests were received for a total of 886 signs (metal or aluminum) sent out. The Sign Committee met six times to discuss a variety of issues. A training position was set up for a person to participate in the Sign Shop one day per week. The Park Sign Maker held two parkwide workshops on sign repair and maintenance.

Canyon area signs were completed and installed concluding a two year project. Designs were approved for park 'Danger' signs. The Park Sign Coordinator was involved with Montana and Idaho Departments of Transportation with regard to signing for restrictions on hazardous material transport through the park. A Madison Junction Sign Inventory was initiated and completed. Revisions were started on the 1992 *Sign Standards Manual*.

Stephen's Creek Nursery

The nursery was busy due to an influx of plants from contract nurseries. Many plants were potted and others repotted. A new water system was hooked up to water over 60 6-foot cottonwood trees that were picked up at a contract nursery. The nursery continues to be used for temporary storage of plants from all over the park.

Over 300 potted and/or bareroot shrubs, trees, and forbs were given to Mammoth area residents to encourage planting native species in the residential area. A number of plants from the nursery were also planted on disturbed areas in the Mammoth area and throughout the park.

Parkwide Planting/Revegetation

At Canyon Village, approximately 250 cubic yards of topsoil from the Canyon sewer project was used to reclaim the site of Uncle Tom's Cabin. Old asphalt was removed, topsoil placed, and snags placed to promote revegetation.

A project of planting various types of native vegetation was completed in front of the new Canyon Lodge unit.

The revegetation/rehabilitation of the old Fishing Bridge Campground is an on-going four year project (50% complete as of 9/93). Vegetation from the immediate area was transplanted into the previously asphalted areas. The vegetation consisted of 79 tree-spaded conifers; several hundred hand-spaded native conifers, grasses, forbs, and deciduous ground covers; and 8 pounds of native seed. To assist in plant cover/protection and moisture retention, 200 cubic yards of mulch and large rocks/boulders and snags were distributed throughout the project site.

Restoration of the Fishing Bridge Contractor's Camp took place. The ground was graded, aerated, and smoothed. Seed was sown and mulch placed on top.

At Grant Village, topsoil from the Montana Power Company was used to vegetate an eroded area on D loop of the campground. Seed and mulch was also placed after water bars and log retaining walls

were installed. Topsoil was used to landscape in front of the Visitor Center at Grant Village and at the parking area of West Thumb.

The tree-spade was utilized to transplant 30 conifers into the Lake government residential area. An application of native seed and mulch was applied.

A landscape design and implementation was completed for the new government house in the Lake Village area. This included grading, spreading topsoil, sowing seed, 30 spade-planted conifers, and parking area definition.

The tree spade was used to plant cottonwoods, aspens, lodgepole, fir, and sagebrush in the Mammoth area. Planting took place in the campground, residential areas, and concession's cabin area (91 deciduous, 31 conifers, and 6 shrubs).

Topsoil from the Federal Highway project was used for several small restoration projects around Norris Junction's government area, campground, and geyser basin. The area surrounding the two, new, Norris residential units received an application of native seed and mulch.

The revegetation of the Old Faithful Inn area consisted of 47 tree-spaded conifers, 75 hand-transplants, native seed, and 245 cubic yards of mulch. Regrading of the area adjacent to the main entry steps was required to remedy an erosion problem.

The tree spade was utilized to transplant 30 conifers into the Lake government residential area. An application of native seed and mulch was also applied.

An off-road act of vandalism at Stephen's Creek was rehabilitated. This project entailed soil compaction abatement and on-site native seed distribution.

At the West Entrance, topsoil from the Hamilton Store Warehouse was used to restore an abandoned road in the government area. Other areas with ground disturbances were also reclaimed. A residential project at West consisted of grading and laying sod after the removal of an underground tank.

Fireline Research

Photo points and data from Daubenmire research plots were again collected from rehabilitated bulldozer firelines to monitor vegetation growth. Due to a wet year, the vegetation was considerably denser than in previous years.

McMinn Bench

The landscape department was responsible for the revegetation portion of the reclamation of the McMinn Bench coal mine site. Seed was collected for the project and the site was then raked, seeded, and mulched. Monitoring will take place next year to determine vegetation growth.

CONTRACTS AND CONSTRUCTION:

US West Modernization Project

The US West "Yellowstone National Park Modernization Project," continued from 1992. Work consisted of upgrading telephone cable and telephone service for Lower Mammoth, Grant Village employee trailer court, Lake Village cabins, new Lake government housing, Old Faithful Snow Lodge, and new Old Faithful concessions dormitory. Site layout, initial walk-throughs, notices to proceed, construction monitoring, and inspections were done by the Landscape Architects' Office.

Underground fuel storage tanks were replaced/repared at the US West Mammoth office and Mount Washburn. These projects were monitored for topsoil salvage.

The planning and permitting process took place for future replacement of aerial cable and poles from Mammoth to the YACC Camp and for installation of new cable at Madison Junction and Fishing Bridge.

Canyon Village Waste Water Treatment Facility Construction

The Canyon Village Waste Water Treatment Facility construction continued from 1992. The Landscape Architects' Office was involved with construction monitoring of the restoration of the pipeline burial from the waste water treatment plant to the water treatment plant and the outfall line. The stump pile was consolidated and partially burned. Sliplining and sewer pipe replacement took place, and the ground disturbance was restored.

Grant Village Montana Power Company Substation and Underground Transmission Line

A Montana Power Company substation and a buried 8,000 linear feet transmission line was constructed at Grant Village. The transmission line was buried from the West Thumb substation site to the new substation site at Grant Village. The two-acre site of the new substation was cleared, grubbed, and topsoil salvaged. Topsoil was scraped for the transmission line where appropriate. Topsoil was placed around the substation fencing and on the transmission line. The Landscape Architects' Office was on-site during these phases of the project.

Old Faithful Concessions - Revegetation of Construction Projects

TW Services, Inc. constructed three new buildings and a parking lot in the government area of Old Faithful. The Landscape Architects' Office consulted on resource concerns and landscaping of these new construction projects. Topsoil from the parking lot was used for reclamation of the three building sites.

Lamar - Yellowstone Institute Cabin Replacement

The Yellowstone Association is replacing the Yellowstone Institute cabins at the Lamar Ranch. The Landscape Architects' Office created a new, accurate cabin layout plan. A proposed construction logistical plan was completed.

Norris Geyser Basin - Telephone Pioneers Project

The Telephone Pioneers of America worked on creating new trails to improve handicap accessibility in the Norris Geyser Basin and to obliterate and restore a few old trails. The Landscape Architects' Office provided a revegetation plan and on-site consulting.

Stephen's Creek - Water Line

The Plumbing Shop buried a new, 3,300 linear feet water line at Stephen's Creek. The Landscape Office monitored the project to ensure the topsoil was properly removed and replaced to protect the resource and promote revegetation of the ground disturbance.

Provided landscape review on road reconstruction project. Pull-outs from Grant to West Thumb were obliterated. Plant materials from the Arnica Creek area and from the Madison to Biscuit Basin road corridor were collected. Other major road collection sections included East Entrance phases I and II. A Cooperative Agreement with the Soil Conservation Service, Bridger Plant Materials Center provided seed cleaning and propagation services.

PUBLIC AFFAIRS OFFICE

Personnel

After acting in the permanent, full-time position of Public Affairs Officer (GS-12) from November 1992 to January 1993, Marsha Karle was selected as the permanent, full-time Public Affairs Officer (GS-12).

Cheryl Matthews was selected as the permanent, full-time Acting Assistant Public Affairs Officer (GS-9) in February 1993. In June 1993 Cheryl was selected as the permanent, full-time Assistant Public Affairs Officer (GS-9).

Elizabeth Kirkpatrick began as a seasonal (GS-5) in the Public Affairs Office in February 1993. In July 1993 she was selected as the permanent, subject-to-furlough Public Affairs Specialist (GS-5).

Stacy Churchwell began in the Public Affairs Office in July 1993 as Correspondence Clerk (GS-4/5).

General Information Services

The Public Affairs Office (PAO) serves as a clearing house of information for the park and local communities and responds daily to written, telephone, and walk-in requests for assistance and information.

A wide range of correspondence was processed in the PAO in 1993, numbering more than 1,800 by mail and more than 4,000 by telephone. More than 20 percent of this correspondence was from foreign countries. Some of this correspondence required detailed answers; for example, the PAO responded to 14 Freedom of Information requests this past year.

The PAO worked closely with the Regional and Washington Public Affairs Offices, keeping them informed on a variety of matters and seeking advice on sensitive issues. Major news items involving Yellowstone included five years after the fires of 1988, replacement of the rope tow at the Undine ski area, backcountry management plan, wolf restoration, visitor use management (winter and summer), road reconstruction, poaching, and grizzly bears.

News Releases

There were 48 press releases, 20 emergency news call-outs, and 3 media advisories issued in 1993.

Filming Permits

Fifty-eight actual filming and photography permits were issued in 1993 ranging from nature film documentaries to product commercials. Additionally, the PAO assisted over 175 other film companies and freelancers throughout the year.

The PAO began developing new filming guidelines in 1993 to be implemented in 1994. These guidelines were developed to better manage commercial filming and still photography in respect to the park's resources, and to make filming and photography more cost effective for the National Park Service. The new guidelines consist of the following: at least one National Park Service employee must be present at all times during filming at the discretion of the Public Affairs Officer; it is the responsibility of the filming company to pay the salary of the employee(s) and any other costs incurred during filming; and implementation of a \$100 non-refundable administrative processing fee along with a minimum \$300 daily use fee covering preparation and monitoring of the permit, administrative costs, telephone calls, processing paper work, and staff time.

Photo/Slide Requests

The PAO answered over 70 requests for loans of slides and photographs on Yellowstone subjects including requests from the general public, educational institutions, and the media. More than 425 photographs and slides were mailed out in response to these requests.

The PAO continues to do the film processing for other divisions in the park; approximately 260 orders were processed.

The development of a new Yellowstone Operating Procedure for Kodalux film processing began in 1993 to be implemented in 1994. This new procedure was developed to better track film sent to the developer and to maintain a record of park images available to the master slide file. The guidelines consist of the following: all film submitted for processing will come through one person in each division along with a registration slip with complete processing instructions; and all film processed under these procedures becomes the property of the National Park Service and may be requested to be made available to the master slide file.

Publication Editing Requests

The PAO responded to more than 200 written and phone requests for editing national and international publications about Yellowstone.

Official Visitors/Countries

Audobon Society/Russian Group - January
Igor and Irana Revenko, Kamchaka, Russia - January
His Excellency Juan Cassiers, Ambassador of Belgium - April
Russian ornithologists accompanied by Fish, Wildlife & Parks
- April
Ondo Engoang, Head of Fauna Development, Ministry of Waters and
Forests, Libreville, Gabonese Republic; Lt. Taoufik Sanaa,
Company Commander, Direction of Developmental Service,
Tunisian Army, Tunis, Tunisia; and Fethi Ouerdani,
Operations Chief, Environment Section, Constitutional Democratic
Rally, Africa - May
Russian study team hosted by the Wyoming Game and Fish - May-July
Mr. Spini, Italian Minister of the Environment - June
Axel Schmidt Graef, President of Rio de Janeiro State Forest
Institute, Meridian International Center - June
Group of twenty European environmental leaders, arranged through
the Meridian International Center - June
Three visitors from the People's Republic of China (3),
accompanied by Ray Stindel, US Fish and Wildlife Service
- June-July
Emmanuel Kaufstein, Israelian government official - June
Rwandan Government Officials - July
Group of eight from Nepal on a USIA Single-country Project - July
Dr. Udo Ulfkotte, Frankfurter Allgemeine - July
Grace Neilson and Peter Hatu, Grounds Manager, Wnakorewaremo
Thermal Reserve, New Zealand - July
Four Indonesian officials and three USAID officials accompanied by
Bonnie Hanley, Mansfield Center for Pacific Affairs - July
Mr. Yayima, Kanagawa Prefectural Government, Cuba - July
Huguette Perret, Federation Rhone Alpes de Protection De La
Nature, France - July
Rose Marie Bruballa, Representative in the French Basque Region,
Agence France Presse - August
Pauli Maatta, National Park Supervisor and Seppo Heikkila, Park
Consultant, members of the Finnish Delegation - August
Marco Berni of Zeta Initiative SRL, Milan, Italy - August
Musa Mohamed Lyimo, Chief of Law Enforcement, Department of
Wildlife, Dar es Salaam, Tanzania - August
Roland Johanson, Swedish News Agency, Stockholm - August
Prince Albert of Monaco - August
Thorodder Thoroddsson, Director, Iceland Nature Conservation
Council - August
Ligia M. Rocha, sponsored by USAID - August
Carlos Eduardo Ferreira da Silva, Forestry Institute, Sao Paulo,
Brazil - August-November
Margaret Ombai, Supervisor of Field Program; Jeremiah Munai,
Field Program Coordinator for the Mambasa Region; A.D. Ogle,
Field Program Coordinator for Laikipia; and Sam Ngethe,
Field Program Coordinator for Amboseli National Park and the

Tsavo East and West National Parks, Kenyan Wildlife Service
- September
Fatih Cakmakoglu and Mustafa Basar, Holiday Tourism and Trade,
Turkey - September
Group of twelve Tibetan visitors - September
Sylvie Grange, Curator for Museum of Cavaillon, France
- September
Mr. Hein van Asperen, Director of the National Forest Service;
Mr. Peter Visser, head of the Groningen, Netherlands office
of the National Forest Service; and Mr. Piet Bakker, Head of
the Division of Land Management of the Forest Service,
Staatsbosbeheer, Netherlands - September
Japanese government officials - September
Angus McLeod, Parks Canada, Ontario - September
Gunter Daghofer, Director of Agriculture and Forestry; Bernhard
Winding, Director of Farming Education Program; and Hubert
Dorfner, Forest Engineer, Austria - October
Wentao Gao and Rurbe Zhang, People's Republic of China - October

Media Contacts

Following are some of the media the PAO assisted in person.
Approximately 2,300 more were assisted by phone in 1993
representing national, international, regional, and local media.

Television/Video/Filming

Stinson Productions - January
Mui+Gray - January
North Country - January
Woods Walker, Inc. - January
Crusaders - February
Fish Creek Enterprises - February
Yellowstone Tour & Travel - February
Tigress Productions - February
Arts & Entertainment Channel, "The Real West" - February
KULR - February, July
Video Visions - February
Associated Television - February
Greystone Communications - February
Destination Cinema (IMAX) - March, June, July, August, September
ESPN - March
Channel 6, Idaho Falls - March
CNN - March
ERA-Film Production - March
HVS Video Productions - March
Guy Higbee - March
Group Durrance Photography - March-December
National Geographic - March, December
KIDK - April
KTVX - April
KSL - April, June

KXLF - May, June
River View Productions - May
K & G Video Productions - May
Terra Productions - May-October
Ford Motor Sports - June
WETA - June
Thunder Lizard Communications - June
Nebraska Educational TV - June
Macleod and Partners - June
NBC News - June
KIFI - June
CBS Evening News - June
NBC - June, August, September, November
Entertainment Tonight - June
KCTS - June
CNN - June
The Natural Image Films - June
Pluabelle Productions - June, July
Joan O'Connor, ISU - June, September
KCNC Denver (NBC Affiliate) - July, September
Johns and Gorman Films - July
KUTV - July
Innervision Studios - July
KMGH, Channel 7 - July
Intermountain Canola Oil - July
Medical News Network - July
Ogilvy & Mather - July
Mary McDermott - July
Stoltz & Partners - July
Sage Advertising - July
Polar Bear Productions - July
Cinetel Productions - July
Channel 3, Idaho Falls - August
Barret Productions - August
Wilde Images - August
Craig Caryl Productions/DECO - August
Hiro Ueno Productions - August
Dockquist Productions - August
KTVU/Fox - August
KTVM Channel 6 - August, September
Mel Hardman Productions - August, September
ABC Nightly News - September
Katy Film Productions - September
Gary Pons - September
Quaker Boy, Inc. - September
Milwaukee Public Museum - September
LASN - September
Eyewitness Video/IMAX - September
World Television Network - September
Jim Jabara - September
WCVB (ABC affiliate) - September
Castle Creek Productions - September

Tess Productions - September
CBS News - Sunday Morning with Charles Kuralt - September
Rescue 911 - September
Bob Asbury - September
Harvey Warren - September
Parker Runnels Productions, Inc. - September, October
Gordan Eastman - September-March
KNUS - October
Department of Media Services, Ricks College - October
Audobon Film - October
Geomatics Info - October
PYTKA - October, November
Analytical Software - November, December
NHK, Japan Broadcasting Corporation - November
Western Way Photography - November
Lucky Duck Productions - November
Brentwood Music - November
Chad Olson - November
O Pictures - December
Trailside-Make Your Own Adventures - December
Robert Anderson, ISU - All year
Wolfgang Bayer Productions - All year
Grunk-O-Films - All year
Bob Landis - All year

Radio

KSGW - February
KFGO - April
KADQ - May
Black Radio Network (BRN), Inc. - June
KSGT - June
Wyoming Public Radio - June
Diane Ream Show - July
KCTR - All Year
KGHL-KIDX - All Year
KODI - All Year
KMTN - All year
KBOZ - All year
Idaho Falls, Channel 6 - All year

Magazines/Newspapers

Fishing World Magazine - January
Audobon Magazine - January, July
Snowmobile Magazine - March
National Geographic Magazine - March, June
Idaho State Journal - April
Kansas City Star - April
Toronto Sun - May
New York Times Magazine - May
Powell Tribune - June, July, September

Philadelphia Inquirer - June
Standard Examiner - August
US News & World Report - August
Rocky Mountain News - August
Sunset Magazine - August
New Orleans Time - September
Gannett News - September
Times-Picayune - September
LA Times - September, November
Time Magazine - October
Focus News Magazine - December
Jackson Hole News - All year
Jackson Hole Guide - All year
Idaho Post Register - All year
Cody Enterprise - All year
Associated Press - All year
Billings Gazette - All year
Livingston Enterprise - All year
Bozeman Daily Chronicle - All year
West Yellowstone News - All year
Casper Star Tribune - All year
Bozeman Free Press - All year
Denver Post - All year

Freelancers

Kathleen Snow - February
Dick Durance - March
Ken Retallic - May
Todd Wilkinson - May
Randy Peterson - May
Glen Bryers - May
Bob Riggs - May
Jim Robbins - June
Geoff O'Gara - June
Charles Egan - August
Susan Starkey - September
Mike Thoele - September
Robin Tawney - October
Tristan Whitman - November
Bob Ekey - All year
Chuck Bartlebaugh - All year

FOREIGN MEDIA CONTACTS

TV/Video

Monica Keyser, German TV - July
Daisuke Yajima, Japan - July
Quantock Institute, Rome - July
Hungarian TV - August
Gerd Zimmermann, Germany - October

Nancy Riggs, German TV - October
Productores Independientes, Channel 4, Ecuador - October
Le Nouvel Observateur, France - October

Radio

Alastair McKenzie, Classic FM Radio, United Kingdom - July

Magazines/Newspapers

Colin Moore, New Zealand Herald - May
Journalists from El Salvador - November
Terra Savage, *Inside Edition*, France - November

Freelancers

Jan Goossens - March
Claude Poulet, France - August

Congressional/Official Visitors

Throughout the year the Public Affairs Office assisted with programming and arrangements for United States government dignitaries, park officials, and other guests. A sampling of these visitors follows:

Tom Collier, Chief of Staff for Secretary Babbitt - August
Governor Howard Dean, Vermont - August
Brooks Yaeger, Policy Analyst for the Assistant Secretary
- September

Meetings

Wyoming Governor's Conference on Tourism - January
California Tourism Conference - February
Highway Mitigation Task Force committee meeting - March, April, May
Steering committee meeting on Rocky Mountain Elk Foundation - March
Montana Governor's Conference on Tourism & Recreation - March
Interagency Grizzly Bear Subcommittee meetings - April, May, September, July, December
Yellowstone/Grand Teton management meeting on visitor use management plan (VUM) - April, June, July, August, October
Rocky Mountain Elk Foundation meeting - April
Greater Yellowstone Coalition 10th Anniversary Annual Meeting - May
Montana Tourism & Recreation Initiative Interagency meeting - June, October
Greater Yellowstone Coalition meeting - July
Department of the Interior Public Affairs meeting - September
Yellowstone Ecosystems Subcommittee meeting - October
Greater Yellowstone Coordinating Committee meeting - October
Northern Rockies Cineposium - December

Miscellaneous

Cody Days! - May

Old Faithful Inn opening - May

100 Millionth Visitor Ceremony - June

Open house at West Yellowstone's Grizzly Park - August

Christmas Tree Lighting Ceremony/Community Open House - December

RESOURCE MANAGEMENT OPERATIONS AND VISITOR PROTECTION

PERSONNEL

Deaths

None

Retirements

1. James Hotchkiss, Animal Packer Foreman

Transfers out of RM&VP

1. Debbie Young, Visitor Services Clerk, to Secretary, Concessions Management Office

Transfers to RM&VP

None

In-Park Reassignments

1. Dick Divine, Canyon Assistant Sub-District Ranger, to Criminal Investigator, LEO
2. Mary Taber, Lake Night Shift Supervisor, to Canyon Assistant Sub-District Ranger
3. Ann Marie Chytra, Snake River Backcountry Supervisor, to Bechler Sub-District Ranger
4. Mark Marschall, Lake Backcountry Supervisor, to Lake Assistant Sub-District Ranger
5. Brian O'Dea, Lamar Sub-District Ranger, to North District Criminal Investigator
6. Michael Keator, Grant Campground Supervisor, to Lamar Backcountry Supervisor
7. Brian Chan, Lamar Backcountry Supervisor, to Lamar Assistant Sub-District Ranger
8. Keith Young, Mammoth Fee Collection Supervisor, to Mammoth Night Shift Supervisor
9. Brian Helms, Park Ranger at Old Faithful, to Mammoth Fee Collection Supervisor

New Hires

1. Cheryl Dillard, VSO Clerk
2. Cat Syrbe, Park Ranger, Old Faithful

PARK VISITATION

A service-wide change in the statistical program used to calculate park visitation was implemented in January 1993. For Yellowstone, this resulted in different person per vehicle ratios

(PPVs) being used, and travel statistics for U.S. Highway 191 were included in the total count for the first time. This resulted in an apparent increase in total recreational and non-recreational visitation.

<u>Visitor Entry by Entrance Station</u>	<u>1992</u>	<u>1993</u>
West	1,067,068	966,348
South	864,928	801,432
North	546,549	534,888
East	543,770	476,189
Northeast	164,275	162,970
U.S. Highway 191	(not included)	892,765
TOTAL	3,186,590	3,834,595

FEE COLLECTION

<u>Entrance Stations</u>	<u>1992</u>	<u>1993</u>
West	\$1,335,753	\$1,401,106
South	71,573	85,627
North	550,446	554,000
East	890,603	909,874
Northeast	223,420	210,069
Sub-Total entrance stations	\$3,071,795	\$3,160,676
<u>Campgrounds</u>	\$1,058,499	\$1,085,825
<u>Boat Permits</u>	23,790	30,490
TOTAL FEES COLLECTED	\$4,154,084	\$4,276,991

VISITOR SERVICES OFFICE

<u>Permits Issued</u>	<u>1992</u>	<u>1993</u>
Golden Eagle Passports	8,402	9,907
Golden Age Passports	10,500	unknown
Golden Access Passports	991	675
Annual Park Passes	13,244	13,155
Boat Permits: motorized	1,552	1,361
non-motorized	1,640	1,872
Park Supplier Permits	218	223
Fishing Permits	159,204	161,058
Employee Vehicle Permits	4,000	3,870
Fee Waivers	246	221
Special Use Permits	110	129
Commercial Use Licenses	109	155

<u>Visitor Information</u>	<u>1992</u>	<u>1993</u>
Information calls	12,000	17,453
Information responses mailed out	5,600	6,500

The Visitor Services Office staff inventoried and distributed 35 different park publications such as maps, newspapers, bison and bear warnings, backcountry brochures, boating permits, etc. to 11 campgrounds, 5 entrance stations, and 7 visitor centers. Over 30 tons of brochures, maps, and newspapers were delivered by the office staff through the course of the summer. The office supervisor, with the help of the Communications Center and Interpretive staff, coordinated and produced park informational mail-out packages.

<u>Lost and Found</u>	<u>1992</u>	<u>1993</u>
Found items	4,073	3,186
Lost items reported	1,800	1,800
Items returned to owner	893	686
Items returned to finder	1,500	530

<u>Communications Center</u>	<u>1992</u>	<u>1993</u>
Case Incidents	4,853	4,738
Bonds Issued	2,406	2,729
Motor Vehicle Accidents	510	505
Identification Notices	325	187
Number located	61	33
Percent located	18.8%	17.6%
Criminal History Checks	1,502	1,873
Law Enforcement Checks	48,476	49,617
Vehicle Checks	10,229	9,811
Persons	7,397	6,758
Locals	11,110	12,808
NCIC Entries	14	7
NCIC Inquiries	19,749	20,240
APB"s	28	39
ATL"s	27	19
Wrecker Requests	228	184
Incoming Calls	342,437	201,472
Call taken by *CINDI	182,674	122,414
Percent of call taken by CINDI	53.3%	60.7%
Information Packets Mailed	29,158	30,434
Foreign	2,034	1,871
Regular	27,124	28,563

<u>Visitor Protection</u>	<u>1992</u>	<u>1993</u>
Permanent commissioned rangers	44	50
Seasonal commissioned rangers	54	54

<u>Additional certification include:</u>	<u>1992</u>	<u>1993</u>
Deputy USF&W Agents	31	29
County Deputy Sheriff	24	34
Deputy U.S. Marshal	1	1
SCUBA certified	4	2
Firearms Rangemaster	27	27

<u>Law Enforcement</u>	<u>1992</u>	<u>1993</u>
Case Incidents Reports	4,853	4,238
Motor Vehicle Accidents	510	505
Part I Offenses	164	152
Part II Offenses	3,021	3,979
Car Clouts	65	52
Violation Notices Issued	2,623	2,836
Arrests	110	92
Court Cases (heard in Yellowstone)	230	182

Resource Violations

Preservation of Natural Resources	38	79
Snowmachine Violations	165	126
Camping	195	182
Closed Area Violations	252	212
Firearm Violations	25	29
Fishing Violations	55	17
Swimming/Bathing Violations	115	41
Wildlife Hunting	13	5
Verbal Warnings for Firearms Violations	--	660

<u>Emergency Medical Services</u>	<u>1992</u>	<u>1993</u>
Basic Life Support cases	391	551
Advanced Life Support cases	103	115
(TOTAL)	(494)	(666)
NPS Ambulance Transports	236	280
Air Ambulance Transports	38	50

West Park Hospital of Cody, Wyoming, the park medical services concessioner, provides oversight to the park EMS program. In 1993, the park had a total of 98 personnel certified as EMS providers. This number included 27 First Responders, 58 EMT-1's, 10 Park Medics, and 1 paramedic. A total of 435 staff-days of EMS training was conducted.

<u>Search and Rescue</u>	<u>1992</u>	<u>1993</u>
# SAR incidents	31	41
# work hours on SAR incidents	2,680	3,409
personnel costs	\$4,475	\$42,300
# flight hours on SAR incidents	26.0	25.9
flight costs	\$19,500	\$21,548
Total SAR expenditures	\$23,975	\$63,848

The park established a technical rescue team training program to improve preparedness parkwide for technical rescue incidents. A 40-hour Managing the Search Function course is planned for early in 1994.

Structural Fire

Alarm and fire responses:	<u>1992</u>	<u>1993</u>
Alarms	157	193
Fires	17	13

A variety of special training sessions were held in 1993 including the following: a Firefighter I/II class (9 trainees); two 40-hour Surviving Hazardous Materials Spills courses (15 participants); and three 8-hour vehicle extrication classes (12 trainees). In addition there were classes on SCBAs, blood borne pathogens, confined space entry, and basic firefighter refresher. New vehicles included a 1,250 gallon pumper from Pierce Fire Truck Company which arrived in August and a military surplus van which will be used for responding to hazardous materials spills.

Wildland Fire Operations

The current Wildland Fire Management Plan for Yellowstone, which was approved in April 1992, authorizes prescribed natural fires. In 1993, there were a total of 10 fire starts of which 5 were Prescribed Natural Fires (PNF) and 5 were wild fires. Two of the wild fires were lightning-caused fires which were suppressed for being out of prescription; the remaining three were human-caused. A total of less than 1 acre was burned. The total cost of suppression operations was \$2,000.

One out-of-park dispatch was made to assist the National Park Service in Alaska. Approximately 70 park personnel attended wildland fire training courses in 1993. These courses include: S-130/S-190, Basic Firefighter; S-217, Interagency Helicopter Training; Field Observer; and Basic Aviation Safety.

The fire monitoring program continued to sample 1,000 hour logs and other vegetative material for fuel moisture content at 42 sites throughout the park. This information continues to provide

the most accurate data for directly relating to the expected fire behavior and is an intricate component of the PNF prescription.

Air Operations

1993 was the second year of a three year contract agreement with Mountain Rotors, Inc. of Jackson, Wyoming. The aircraft provided was a Bell 206 L-3 "Long-Ranger". The flight rate was \$832 per hour with a 200 hour guarantee for the 108 day contract period defined as June 15 through September 30, 1993. The contract had 7 days of unavailability, with two of those requiring us to bring in rental aircraft to accomplish planned missions.

The contract helicopter flew 204.3 hours in 1993, an increase of 4.0 hours over 1992. An additional 61.5 hours were flown on park operations by rental helicopters and 34.9 hours were flown by military and Montana Department of Fish, Wildlife and Parks helicopters. No personnel accidents or injuries were incurred during 1993 aviation operations.

Search and Rescue (SAR) operations comprised 22.7% of the total contract helicopter flight hours reflecting a dramatic change from the previous three years when SAR use had averaged about 6% of the total flight hours.

The helirappel program has been suspended indefinitely since 1991 because of a preference for the more safe and efficient short-haul technique. We will consider formally terminating the helirappel program in 1994. Short-haul operations were suspended this season due to concerns about the performance of the contract helicopter.

There were four aircraft incidents during 1993. The pilot punched off a sling load during the Mount Sheridan Lookout reconstruction which landed on the Grant Village sewage treatment plant fence. A sling load of old roof decking from the Crystal Springs Cabin bound for the new Three Rivers Cabin slipped out of the rigging. A sleeping bag blew out of a load to trail crew supplies while being flown from Grant Village to Lynx Creek. A window was blown out of the Old Faithful Clinic when the doctor closed the inside window but left the outside one open when a CH-47 "Chinook" was landing at Old Faithful during the B-47 project.

Other aviation operations included animal counts, animal capture, air-medical flights, removal of the B-47 wreckage in cooperation with the military, and the McMinn mine reclamation. There were 50 air-medical flights flown during 1993, up from 38 in 1992. Eastern Idaho Regional Medical Center flew 40 transports, Bannock Regional Medical Center flew 4 transports, Billings flew 3 transports, Salt Lake City AIRMED flew jointly on 3 transports for burn patients, Jackson Air Ambulance flew on 1 transport and the Park's contract helicopter flew 2 transports.

Backcountry Management

There were 6,576 backcountry permits issued for a total of 44,977 visitor use nights (the highest number since 1982) and 8,584 stock use nights (the highest number since records were established in 1972).

A computer system was installed in the central backcountry office and a campsite reservation software program was developed by Computer Specialist Roger Whiteside. The program was an overwhelming success and will be expanded to the Mammoth Backcountry Office in 1994 and to other remote stations in 1995 and 1996.

The stocksite monitoring program was improved and expanded to more sites. Water quality was monitored at Shoshone Lake in response to concerns about human waste disposal. Extensive work was accomplished on the *Draft Backcountry Management Plan*. Yellowstone hosted the second annual Rocky Mountain Region Backcountry Management Workshop which was well attended by representatives from parks in two regions, the Rocky Mountain Regional Office, and WASO.

<u>Limited Concessions Permits</u>	<u>1992</u>	<u>1993</u>
# Limited Concessions Permits	62	59
# commercial stock trips reported	708	657
# LCPs transferred/terminated	0/0	0/3

In 1993, there were 59 saddle and pack stock outfitters who operated in Yellowstone under Limited Concessions Permits. Four of these were llama packers. All 59 outfitters made at least one trip into the park. The highest use reported was by one outfitter who made 81 day trips. Approximately 250 outfitters and guides attended the annual two-day meeting in June. In addition, winter meetings were held in Cody and Jackson, Wyoming, and Bozeman, Montana.

Resource Management Operations

A major reorganization of the park resources management functions occurred early in 1993. The headquarters natural resources staff biologists, the planning and compliance work unit, and cultural resources staff were placed under the newly created Center for Yellowstone Resources. Resources management operations remained in the division of Resources Management Operations and Visitor Protection. Significant resources operations programs within the RMO&VP division included the following.

Vegetation Management: Division staff surveyed 1,926 acres for exotic plants, treated 28 species on 241 acres, and reported 7,523 acres of exotic plant infestations. Dalmatian toadflax,

houndstongue, Canada thistle, yellow sweetclover, and spotted knapweed accounted for the majority of the infested acreage. The staff established a park-wide exotic plant computer database which included information from the 1993 surveys. Staff also cooperated in several ecosystem initiatives including the Greater Yellowstone Area Noxious Weed Program and the Henry's Fork, Upper Madison, and Upper Snake Weed Management Areas. Hazard trees in park campgrounds were surveyed and 224 beetle-killed trees were removed from the Madison Campground.

Inventory and Monitoring: Staff monitored amphibians in cooperation with Dr. Charles Peterson at the South Entrance Pond, the Lake area, Harlequin Lake, Slough Creek, and Slide Lake. Ongoing whitebark pine transects were conducted at Avalanche Peak, Pitchstone Plateau, Big Game Ridge, and Two Ocean Plateau. Samples from bison, elk, mule deer, and moose were collected for the DNA and Wildlife Health Sampling programs. Air quality monitoring stations were operated at the Tower and Lake rangers stations. Thirty-four fish creel exit surveys were conducted in cooperation with the U.S. Fish and Wildlife Service. Water samples were collected for the chloride flux monitoring program on the Gardiner, Yellowstone, Snake, and Madison Rivers in cooperation with the U.S. Geological Survey. Staff placed 120 traps parkwide to monitor gypsy moth presence. Winter weather observations were recorded at 12 sites throughout the park.

Geothermal Management: Geothermal pools in the Upper, Middle, and Lower Geyser Basins were monitored for vandalism. Staff removed coins (3,590), cigarette butts (approx. 8,000), sticks, and rocks thrown into thermal features; and vacuumed Morning Glory Pool, Pebble Geyser, and a small unnamed pool in Black Sand Basin with assistance of NPS Maintenance and the honey wagon. Pebble Geyser, which had been plugged with debris, began erupting after the cleanout. Staff assisted the Park Geologist monitor geothermal sites at Heart Lake and Shoshone Lake and assisted Interpretation Division staff develop computer databases for geothermal data collected at West Thumb Geyser Basin, Mud Volcano, and Norris Geyser Basin.

Site Restoration: Division personnel cooperated with the Wyoming Abandoned Mine Lands (AML) Program and the Center for Yellowstone Resources to plan restoration efforts at Little Thumb Creek, Dry Creek, and Ice Lake Pit. The McMinn Bench Coal Mine was restored in cooperation with the Montana AML Program, Yellowstone Helitack Crew, NPS Maintenance, and the Center for Yellowstone Resources. Other restoration projects included the removal of human disturbances and the reclamation of sites at Fishing Bridge Campground, Lodge Creek, Brink of the Upper Falls, Clear Lake Trailhead, Cascade Creek, Bacon Rind Trailhead, and Soldier's Pit. Restoration research was continued on the Boundary Line Area in anticipation of NRPP restoration funding scheduled to begin in FY 94. An erosion control project was completed in

Grant Village Campground which involved the coordination of 377 staff days contributed by NPS Maintenance, YCC crews, and volunteers.

Wildlife Management: Division staff coordinated and conducted spring carcass surveys on the Firehole River, Norris area, and Heart Lake. Monitored Yellowstone Lake tributaries for cutthroat trout spawning and associated bear activity at Lake, Bridge Bay Campground, and Grant Village Campground. Performed interpretive talks on bear habitat use and management for park visitors, classrooms, and professional meetings. Oriented park employees to the park's bear management program and to living in grizzly bear habitat. Managed habituated coyotes, elk, bison, grizzly bears, and black bears parkwide. Conducted integrated pest management programs for bats at the Lake Ranger Station, Lake Lodge, Lake Hamilton's Store, and the Grant Village Camper Services Building.

YELLOWSTONE CENTER FOR RESOURCES

Many of the recommendations from the strategy developed at Vail, the National Academy of Sciences Report, Science in the Parks II, and the activities associated with the strategic planning effort for improving the natural resources program in the National Park Service point toward a restructuring of resource programs, increased professionalization in resource programs, and increasing the role of science in management of national parks.

At the request of the Superintendent, Yellowstone underwent a major review of resource programs and organizational structure by an interdisciplinary team formed by RMRO. Based on the recommendations of that team, current organizational situations, and the desire to improve resource protection in Yellowstone, the Yellowstone Center for Resources (YCR) was formed. The principal objectives were to raise the visibility of natural and cultural resources, enhance communication, improve organizational fidelity to funding programs, minimize duplication, and better align staff expertise to address resource issues and planning.

The Yellowstone Center for Resources was formed by combinations of natural resource management, cultural resources, planning and compliance, GIS, and research functions. The organizational structure that resulted was five branches under the leadership of John Varley, Center Director. The branches include the Branches of Natural Resources, Cultural Resources, Advanced Resource Technology, Planning and Compliance, and Professional Support, each under the direction of a Branch Chief, with research grade personnel to be assigned to a CPSU affiliated with Montana State University. Research personnel were subsequently transferred to the National Biological Survey when that agency was newly formed.

In 1993, Yellowstone hosted 220 research projects in Yellowstone including 57 projects in physical science, 39 in forestry/range/plant ecology, 64 in wildlife topics including wolves and bears, 31 in microbiology, 17 in prehistoric/historical/social topics, and 21 in fire. NPS funding for this research was \$1,371,007. Additional money came from the following: other federal agencies, \$3,705,621; state agencies, \$600,258; academic, \$378,398; non-profit, \$302,520; personal/other, \$158,185; for a total of \$6,515,989.

Resource Council

To better establish resource and project priorities within the park, a "board of directors" was established called the Yellowstone Resource Council. The Council is comprised of park management and senior staff with program responsibility. The council meets regularly (weekly or biweekly) after regular staff meetings to review the current project priorities, to review new proposed projects, and to integrate interdivisional priorities.

Project priorities are established based on urgency and capabilities. At the time a project receives approval, an interdivisional "Resource Team" is formed that includes the necessary staff expertise to carry the project or project planning to completion. Staff resources are then committed by the affected divisions so the project can be completed in a timely and efficient manner. Principal advantages include improved coordination, establishment of overall priorities, and the focusing of necessary expertise on established parkwide priorities.

Second Biennial Scientific Conference on the Greater Yellowstone Ecosystem: The Ecological Implications of Fire in Greater Yellowstone

From September 20 through 22, more than 200 scientists, managers, and journalists gathered at Mammoth Hot Springs to review the first five years of research following the fires of 1988. The conference provided "saturation-level" information from dozens of studies in and around Yellowstone National Park. It was co-sponsored by the American Institute of Biological Sciences, the Ecological Society of America, the International Association of Wildland Fire, Montana State University, the Montana and Colorado-Wyoming chapters of the Society of American Foresters, the University of Wyoming, the U.S. Fish & Wildlife Service, the USDA Forest Service, the Yellowstone Association, and the National Park Service, which was the host agency.

There were 58 scheduled papers and 15 posters necessitating concurrent sessions in a much busier schedule than we had for our first conference in 1991. Keynote speakers included David Peterson, Chief of the NASA Ames Research Center's Ecosystem Science & Technology Branch; Dick Rothermel of the USDA Forest Service Fire Sciences Laboratory in Missoula, Montana; Mark Boyce, Vallier Distinguished Professor of Quantitative Ecology at the University of Wisconsin-Stevens Point; Monica Turner of the Environmental Sciences Division, Oak Ridge National Laboratory; and Monte Hummel, President and Chief Executive Officer of World Wildlife Fund Canada. Boyce delivered the A. Starker Leopold Lecture, and Hummel delivered the address at the Superintendent's International Luncheon. Dennis Knight of the University of Wyoming delivered the closing summary which was published in the Fall 1993 issue of *Yellowstone Science*; this summary provides an overview of the conference papers.

The National Park Service is cooperating with the International Association of Wildland Fire in the publication of the proceedings. The papers are now in the peer-review process.

NATURAL RESOURCES

1993 marked the first full year of the Branch of Natural Resources (BNR) as part of the newly formed Yellowstone Center

for Resources. It was a transitional year with staffing, budgets, and new roles and responsibilities in a state of flux.

The BNR became an active participant in the newly formed Resource Council. A number of BNR staff members have been assigned to newly established Resource Teams to work on complex resource problems and issues. BNR personnel became increasingly active in providing resource data, conducting assessments, and making mitigation recommendations on a variety of park projects such as highway reconstruction.

Responses to external threats occupied a large amount of BNR staff time in relation to internal issues such as the proposed Noranda gold mine at Cooke City. The American Rivers Association and the National Parks and Conservation Association (NPCA) joined with the Greater Yellowstone Coalition (GYC) in outspoken opposition to the mine. Favorable reporting was received by a number of media including *Time* magazine and the CBS Sunday Morning program. Over fifty media contacts were made by BNR staff.

A much needed secretary was added to the staff, and Bob Chambers, Rick Hutchinson, and Mary Harter were reassigned. Dave Price was reassigned to the Branch of Compliance and Planning.

Backcountry Management

Extensive work was accomplished on Yellowstone's first complete *Draft Backcountry Management Plan and Environmental Assessment* in two decades. The plan was 97 percent completed by the end of 1993 in anticipation of its being released for public review and comment in early 1994.

There were 6,586 backcountry permits issued and 260 commercial outfitter trips taken in 1993. A backcountry workshop, at the suggestion of West District Ranger Bob Seibert, was again hosted by YNP and was well represented by parks of the Rocky Mountain Region and from WASO. A computerized backcountry permit system was completed and used in the Backcountry Management Office and started with the Mammoth Ranger Station as the first satellite station to hook into the Backcountry Management Office network.

Bear Management

There were 1,698 bear sighting reports recorded in calendar year 1993; 803 grizzly bears, 700 black bears, and 195 unknown species.

Eight incidents of bears obtaining unnatural foods were reported. Grizzly bears were involved in five of the incidents and unknown species of bear were involved in three. Seven (4 grizzly bear, 3 unknown species of bear) of the incidents involved bears eating apples in a historic orchard, and one of the incidents involved a grizzly bear obtaining a hikers lunch from a backpack. There were four (1 grizzly bear, 2 black bear, 1 unknown species of bear) additional incidents of bear-caused property damage in which the bears involved did not obtain human foods.

Nineteen incidents of bear-human confrontations in which bears entered occupied backcountry campsites or charged or approached people were reported. Twelve of these incidents involved grizzly bears, six involved black bears, and one involved an unknown species of bear. There were no bear-caused human injuries in 1993.

No bears were removed from the park population for management reasons, and there were no known natural bear deaths within the park in 1993. There were no road-killed bears in 1993.

One sub-adult grizzly, reported to have charged several groups of people, was trapped for management purposes. On July 21, 1993, Yellowstone National Park personnel trapped a 130-pound sub-adult male grizzly bear (became radio bear #211) in the Mount Washburn area of the park. A bear of similar description had charged groups of people on five different occasions in the same area. The trapped bear was immobilized (with Telazol), radio collared, and ear-tagged to increase the chances of positively identifying the bear that was involved in the aggressive behavior toward park visitors. The bear was then released on site and monitored by radio telemetry. Bear #211 was not involved in any known aggressive encounters with people after it was trapped and radio collared. After this action was taken, there were no further reported incidents of a bear behaving aggressively toward people in this area.

Six grizzly bears from outside of the park were accepted from the Wyoming Game and Fish Department for relocation into the park during 1993. In all six cases, it was the bear's first known involvement in bear-human conflict situations. One of the bears had been killing cattle on the Bridger-Teton National Forest. The park has accepted stock killing bears in the past without any subsequent problems. The other five cases involved bears that had broken into sheds where garbage had been stored. The park accepted the bears for relocation into the park so that the Wyoming Game and Fish Department would have time to work with the landowners involved to bear-proof their garbage storage sheds before the bears returned to their original home ranges. None of the six bears were involved in any further known bear-human conflict situations after being relocated. Four of the six bears left the park after being released.

Whitebark Pine and Spring Carcass Surveys

Whitebark pine transects and bear utilization/carcass surveys were conducted in coordination with the Interagency Grizzly Bear Study Team.

Road-killed Wildlife

In 1993, a total of 109 large mammals were known to have been hit and killed by vehicles on park roads. These included 37 elk, 36 mule deer, 11 bison, 10 coyotes, 9 moose, 2 whitetail deer, and 1 each of antelope, beaver, bighorn sheep, and bobcat.

Wildlife Health Monitoring Program

In 1992, Yellowstone National Park (YNP), in cooperation with the Wyoming State Veterinary Laboratory, began a Wildlife Health Sampling Program. The primary objectives of the program include: 1) establish baseline health data for wildlife species, 2) establish health monitoring protocols for wildlife in parks, 3) survey and monitor wildlife for diseases and environmental toxins, and 4) establish a wildlife serum and tissue bank for future analysis.

A WASO initiative funded the purchase of sample collection and storage supplies, basic training for park staff in wildlife necropsy techniques, and the diagnostic services to be provided by the Wyoming State Veterinary Laboratory.

In 1993, 33 animals representing 16 different species were sampled. Samples were collected by District Resource Management Coordinators, Park Rangers, Branch of Professional Services personnel, and Branch of Natural Resources personnel.

After two years of the program, 95 animals representing 23 different species have been sampled. To date, significant findings of the program include: 1) evidence of canine parvovirus-induced mortality in coyotes on the northern range, 2) canine distemper-induced mortality in a pine marten collected at Old Faithful, 3) evidence of intraspecific aggression in grizzly bears that resulted in the death of a sub-adult female bear, and 4) a little brown bat with abnormally soft bones possibly caused by a phosphorous or vitamin D deficiency collected at Grant Village (Williams 1993). In addition, rabies tests conducted on eight little brown bats, four coyotes, one grizzly bear, one red fox, and one mouse were all negative.

Wildlife DNA Sampling Program

Yellowstone National Park, in conjunction with the Wyoming State Crime Lab, began collecting wildlife DNA samples from large mammals in 1991. The samples will provide baseline data for

future wildlife DNA comparisons and poaching investigations. Samples are collected predominately from road-killed wildlife but also from animals that die of natural and other causes.

In 1993, DNA samples were collected from 39 animals representing 7 different species of wildlife. Samples were collected by District Resource Management Coordinators, Park Rangers, and Bear Management Office personnel. After three years (1990 - 1993) of the program, 138 animals representing eight different species of wildlife have been sampled.

Rare Animal Sighting Report System

As part of the 1993 division reorganization, the Bear Management Office assumed responsibility for the park's rare animal sighting system (including wolf observation system). Bear Management Office personnel then entered into a computer data base 1,027 rare animal sighting records from the years 1986 - 1992. In addition, 317 rare animal reports recorded during 1993 were entered into the computer database.

Birds

1993 marked the last year for closely monitoring post-fire impacts on Yellowstone birdlife. Cavity-nesting birds did respond to the wildfires as predicted to some degree, but there were many surprises. Three-toed woodpeckers (black-backed and three-toed) did not boom as predicted especially in the large scale high fire intensity areas. Lewis' woodpeckers were observed pioneering new areas, consequently expanding their range. There also appears to be an increase in cavity-nesting waterfowl (Barrow's goldeneye and bufflehead) and raptors (American kestrel). As expected, mountain bluebirds, tree swallows, and northern flickers are dramatically increasing as are similar species that rely on tree cavities for nesting.

Osprey populations showed the most favorable response. Bald eagle and peregrine falcon populations, although showing increases not necessarily due to the wildfires, adapted quite readily to the modified environment. Trumpeter swans showed no noticeable population change as a result of this cataclysmic event.

Trumpeter swan production in Yellowstone reached an all time low. There were only six nest attempts in 1993, and not one cygnet is known to have hatched throughout the entire park. Weather and predators continue to be responsible for the poor showing. The State of Wyoming has joined ranks with Yellowstone National Park in an effort to improve the trumpeter swan population.

A total of 91 osprey nests were counted in 1993 with 48 of the nesting pairs successful in raising young. This amounted to only

73 fledglings, and was primarily due to an unseasonably wet summer. Even with these production setbacks, the osprey population continues to show robust growth.

The peregrine falcon is also showing great promise and appears well on the road to recovery. In 1993, we gained another nesting pair for a total of nine peregrine nesting pairs. A total of 16 young fledged this year, all from wild eyries.

1993 proved to be a good year for bald eagle production. A total of 17 eaglets fledged from 18 active nest sites. This is excellent for Yellowstone and is closely tied to the mild weather conditions we had in March and April.

Common loons did not do very well which can be expected during wet summers. Of the eleven nesting attempts, only two pair were successful in fledging a grand total of two loonlets. Excessive flooding and one of the coldest spring/summers on record accounted for the poor production.

Harlequin ducks continued to be monitored throughout the park. One area closely monitored is the LeHardy Rapids area where small numbers of harlequins and large numbers of visitors congregate. The area had been closed annually for a five week period (May 1 - June 7) from 1991 to 1993 to evaluate harlequin duck use under normal undisturbed conditions. Management recommendations developed from the three year study include measures to allow limited access to view the rapids and ducks. The area will continue to be monitored to improve future management.

Vegetation and Integrated Park Management (IPM)

District resource management coordinators, in cooperation with the vegetation management specialist, compiled a parkwide GIS database and map of exotic infestations by species and area of infestation. A second weed management area, the Upper Madison Weed Management Area, has been formed to include the west-central portion of the park. Efforts to contain the spread of exotics remain inadequate.

A number of IPM actions were taken, including cooperative efforts between park staff and concessionaires, to address swallow mites in the Old Faithful Inn and a number of employee dorms parkwide, roosting bats and bat mites in an employee residence in Mammoth, small rodents in the Mammoth and Canyon Village concessioner areas, and ant and household insect problems in visitor cabins parkwide. Consultations and cooperative efforts with park staff and the concessionaires continue to increase. Thirty-seven standing dead trees were removed from the Tower Creek Campground during 1993. Incidental hazard tree removal in developed areas continues to be accomplished as time and manpower allow.

Mining and Minerals

The abandoned McMinn coal mine located on McMinn terrace between Mammoth Hot Springs and Gardiner, Montana, was reclaimed by park staff using funds from the Montana Abandoned Mine Lands program. The opening to a partially-collapsed adit was closed, debris and two coal tailings piles were removed, and the site was revegetated.

Park staff reviewed and revised an Environmental Assessment for the reclamation of three abandoned gravel pits and their associated access roads (Little Thumb, Dry Creek, and Ice Lake). The Wyoming Abandoned Mine Lands Program is funding the reclamation including environmental compliance, design and implementation. Park staff will draft a FONSI in 1994. Reclamation is expected to begin in 1996.

Proposals for the reclamation of three additional abandoned gravel pits (Bridge Bay/Natural Bridge, Lone Star Geyser, and Sedge Creek) were submitted to the Wyoming Abandoned Mine Lands Program. The State's initial response has been positive and the chances for funding look good.

The plan of operations and permit application for the proposed New World gold mine to be located within 2.5 miles of the park near Cooke City was declared complete by the Montana Department of State Lands in 1993. Preparation of an Environmental Impact Statement has begun. Montana Department of State Lands and Gallatin and Shoshone National Forests are co-lead agencies. The National Park Service is a cooperating agency, with Mary Hektner, Resource Management Specialist from Yellowstone, acting as the NPS representative. Three agency-sponsored and one citizen-sponsored scoping meetings were held. NPS staff are devoting considerable time attending cooperating agency and citizen/agency task force meetings and tracking and responding to information requests from the lead agencies, the public, and the press.

The Mineral Hill gold mine located just north of the park's boundary is proposing to expand operations into the headwaters area of Crevice Creek which flows into the park. The park is a member of the community task force and has had several discussions with the mine managers regarding the park's concerns.

Water Resources

The Montana Reserved Water Rights Compact, recognizing the reserved water rights of Yellowstone National Park, Big Hole National Battlefield, and Glacier National Park, was ratified by the Montana state legislature and signed into state law by Montana Governor Marc Racicot in April 1993. The Compact became effective with Interior Secretary Babbitt and the Department of Justice's signatures on January 31, 1994. The Compact

establishes a process for State and Federal water administrators to protect water resources at the three parks including the hydrothermal resources of Yellowstone.

The Old Faithful Protection Act of 1993 was introduced to Congress by U.S. Representative Pat Williams. This bill would prohibit all geothermal development around the park, has passed the House of Representatives, and is now pending before the Senate.

Air Resources

The park continues to be concerned about local air quality at the West Entrance and Old Faithful due to vehicle emissions, especially during periods of winter inversions. Technical assistance has been requested from the WASO Air Resources Division.

Additional External Affairs Reviews

Park staff reviewed and commented on a draft Federal Highways Administration/Wyoming Transportation Department EIS for improvements of US Highway 14/16/20 from west of Cody, Wyoming, to Yellowstone National Park.

Park staff also reviewed and commented on a Montana Department of Health and Environmental Sciences draft Supplemental EIS for the Church Universal and Triumphant's proposed developments adjacent to the park in Park County, Montana.

Natural Resource Management Activities

Park staff mapped and described wetlands in conjunction with the proposed Madison Junction to Biscuit Basin Road Reconstruction project, the proposal to bury the US West telephone lines between Mammoth and the YACC camp, and the proposal to rehabilitate three abandoned gravel pits.

Geothermal

Inspections of the five remaining uncemented, high temperature geothermal research drill holes were conducted during the week of June 23, 1993, with Robert Fournier, USGS. A decision was made to plug drill holes Y-4, Y-5, Y-6, Y-10, and Y-12, leaving only Y-7 as a low temperature well open for future research and monitoring needs.

In cooperation with MacArthur Grant scientist James Westphal of California Institute of Technology and Dr. Sue Kieffer of the University of British Columbia, research on the internal plumbing of Old Faithful geyser was continued. A modified video and temperature probe were lowered into the vent on September 26.

CULTURAL RESOURCES

The Branch of Cultural Resources was created as part of the Yellowstone Center for Resources in March 1993. This report focuses primarily on cultural resources since that time.

As originally constituted in March 1993, the branch consisted of Branch Chief, Cultural Resources Management Specialist, Historian, Curator, and the respective staffs and operations under each of these positions. An Archeologist was identified as a high priority to be added to this core group along with seasonal and temporary support for that position. Anticipating the hiring of a professional administrator in the branch chief position, Paul Schullery, senior editor in the YCR, was temporarily assigned as acting Branch Chief.

Because of budget shortfalls, personnel transfers, and other problems, the Cultural Resources Branch has shrunk dramatically rather than grown or even stabilized. The Branch Chief position has not been filled, the half-time management assistant position under the Cultural Resources Management Specialist has remained unfilled, and the Archeologist position also remains unfilled. Tom Tankersley, Historian, moved to the Interpretive Division to become Assistant Chief for Operations and as a temporary expedient, he continued supervision of the library and archives operations. The final organizational disposition of the library and archives remains an unresolved issue.

Efforts in 1994 will be toward keeping the various cultural resources operations in the YCR, maintaining critical functions, and pursuing resolution of budget and personnel short falls.

Branch staff did, however, contribute much individually to various park programs. The specific accomplishments of the various elements of the branch are outlined below.

Cultural Resources Management

The emphasis in CRM remains on providing guidance for and implementing cultural compliance procedures. As a result of the April 1992 delegation of authority, the park continues to take the lead on cultural compliance issues. The delegation of authority to Yellowstone in regard to Section 106 has gone well. The CRM staff worked closely with State Historic Preservation Offices (SHPO) and the Advisory Council on Historic Preservation in regard to Section 106; however, Regional Office staff continued to play an integral role in some Section 106 actions by providing technical advice and guidance.

During 1993, 127 projects were logged in CRM. These were all new projects that required Section 106 advice and/or action. In addition to these projects, there were ten projects from 1992

that were carried over into 1993. These 137 projects ranged from the parkwide road improvement project to EISS to preservation maintenance projects.

The US West project continued in 1993 with archeological inventories conducted at US West project sites at Fishing Bridge, Madison, and Mammoth. Consultation with Wyoming SHPO was initiated for these segments. Archeological monitoring of the Lake segment of the US West project also occurred.

The parkwide road improvement project continued to be at the forefront in CRM. On January 22, 1993, a Programmatic Agreement (PA) for cultural resources Section 106 was finalized between the Advisory Council on Historic Preservation, the Montana and Wyoming SHPOs, the Regional Office, and Yellowstone. This document provided a framework within which cultural resources compliance would be conducted. The final document involved the efforts of all signature parties and now is an important component of the road improvement project. Other road improvement accomplishments included a February meeting in Denver with all the PA parties as well as the Denver Service Center (DSC) to discuss PA implementation and road improvement schedules; the preparation of The Archeological Treatment Plan and Addendum for Historic Sites (prepared by the Midwest Archeological Center [MWAC]); contracting of an Ethnographic resource study which will take place over 18 months and is scheduled to begin in 1994; a Data Recovery Plan which was finalized for the three sites on the East Entrance Road and data recovery was started (MWAC); preparation of a draft EA for Madison to Biscuit Basin (DSC with park and MWAC input); completion of the Madison to Biscuit Basin archeological inventory; and completion of an Annual Report on the road improvement project.

The amount of work accomplished in the park that related to the parkwide road improvement project would not have been possible without the help of Melissa Connor, a MWAC archeologist. Melissa was stationed in the park from July through September to work on the road improvement project. Upon her return to MWAC in October, she continued to provide assistance to the park. Her assistance proved invaluable in coping with the increased workload associated with the road improvement project.

Numerous planning efforts and reports required CRM review and input including the following: Bison EIS, Madison to Biscuit Basin EA, development of park design standards, BLA project, Roosevelt Lodge Historic Structures Report, Fishing Bridge Campground Relocation EIS, and Hazard Fuels Plan.

Training opportunities were also provided for Yellowstone staff. Archeological inventory, testing, data recovery, and monitoring were conducted in various locations in the park, and employees

were notified that volunteers would be accepted on these projects. Some employees did participate in these activities. Another archeological training activity was arranged in September with the assistance of Ken Cannon (MWAC) and Dan Reinhart (Yellowstone) at the Pelican Creek Campground, and six people participated.

In 1993, two interpretive activities took place. Ken Cannon provided an evening lecture on park archeology during Montana Archeology Week and Melissa Connor and Cathy Smith provided interpretive activities on archeology for the Girl Scouts (one day). In addition to these activities, Ken Cannon prepared an archeological brochure to be used in conjunction with the East Entrance data recovery. Ginny Cowan and Linda Young (Interpretation) assisted Ken in the brochure preparation.

The draft cultural resources component of the Resources Management Plan was sent out for review in 1993 and comments were received.

Research Library

The Research Library is supported by Yellowstone Association funding which provides salaries for two part-time librarians as well as support for acquisition of new materials. This is a long-standing partnership with the National Park Service which, for its part, provides facility space and other services. The library continues to be a remarkably important resource for park operations and the public; together with the archives and the museum collection, it is one of the foremost centers of study not only of Yellowstone but of national park history as well. During the period that the library was part of the YCR, April through September, it was visited and used by 278 NPS personnel and 321 members of the public who checked out a total of 307 books and used many other materials in the library.

Archives

The Yellowstone Archives are designated as a satellite branch of the National Archives, adhering to the guidelines and management policies of that national collection. In 1993, the archives underwent and passed a periodic inspection by the National Archives representative. Management, storage, and documentation of archival materials were all advanced by the attentions of the Historian and Archives Technician. Through an ongoing relationship between the park and Montana State University, two history interns worked in the archives in the summer of 1993. The special collections of the archives and rare book and manuscript files were used by about 30 people during the six-month period that they were administered as part of the Branch of

Cultural Resources and were in constant use by park staff as well, especially Archives Technician Lee Whittlesey, in support of various operations programs.

Curation

Curator Cyd Martin moved to Alaska in August. The new Curator, Susan Kraft, arrived in November to assume her duties. Susan will spend most of her first eight months as a participant in the National Park Service Resource Management Training program and will assume full-time duties in Yellowstone in June of 1994. Elsa Kortge, Acting Curator in the interim, prepared the 6,836 backlog catalog cards and shipped them to the National Catalog Archives in Harpers Ferry. Seventy-one accessions (representing more than 2,000 artifacts) were added to the museum collection. The historic furniture collection was cleaned and placed in the new storage room in the Gardiner warehouse. In April, a log book was initiated to record the number of incoming research requests. For those nine months, more than 250 calls and visits were received, and prompt attention was given to all research requests. More than 10,000 artifacts were cataloged and entered into the ANCS database.

The Yellowstone Park herbarium, a part of the museum collection, continued to be used extensively, especially during the summer months, both by park personnel and outside researchers. There are 6,651 catalogued specimens in the herbarium. This year there were only a few specimens obtained for the collection (123) since there is already a significant backlog of approximately 2,500 collections that need to be identified, labeled, mounted, and catalogued into the collection.

Among the most important of herbarium issues involved threatened, rare, and endangered species. Abronia ammophila (Yellowstone sand verben), a plant endemic to the shores of Yellowstone Lake, was listed in the September 1993 Notice of Review as a category 2 species. The only other plant species with federal status that occurs in Yellowstone National Park is Agrostis rossiae (Ross bentgrass), which is also a category 2 species, found at scattered locations in the geyser basins along the Firehole River drainage. Additional survey work failed to locate any new populations of either species. A "Species of Special Concern" in the state of Wyoming, Draba borealis (boreal draba), was located for the first time in Yellowstone National Park, and additional new populations of several other rare species were located.

ADVANCED RESOURCES TECHNOLOGY

BART (the Branch of Advanced Resource Technology) was another of the branches of the YCR formed in March of 1993. The missions of this branch are to advance the use of GIS technology in natural resource applications, provide advanced analytical support to

management through landscape level modelling and integration of internal and external data, and to maintain and increase functionality for all levels of users.

Funding has not been sufficient to replace the GIS manager or a GIS technician, both vacant since May of 1993. Equipment replacement funding has been only on a maintenance level.

Even so, this year we have made some progress on our objectives. We have maintained and increased interest in management oriented GIS by demonstrating uses via a pilot landscape model project. We have reorganized, repaired, and maintained existing equipment and have begun the process of quality control and data integration. We have provided limited assistance to project managers, planning, research, natural resources, and external research personnel. We have integrated about one-half of our data. We have begun the process of integration with Regional and WASO ecosystem management policies.

PLANNING AND COMPLIANCE

The staff in Planning and Compliance made significant progress on a wide variety of projects in 1993 that are within the office's role and function: to provide assistance to all park offices and divisions in the areas of development and resources management planning, NEPA compliance, permit application, accessibility, project tracking, and project clearances.

Lake/Bridge Bay Development Concept Plan

At long last, the *Lake/Bridge Bay Development Concept Plan* was completed in March 1993 with signing of the Finding of No Significant Impact. Following a challenge by the Sierra Club Legal Defense Fund, the U.S. Fish and Wildlife Service amended their biological opinion to confirm that existing operations at Lake and Bridge Bay were not jeopardizing the continued existence of the grizzly bear. The challenge was withdrawn, and planning office staff coordinated initial implementation of the plan.

Fishing Bridge Campsite Replacement

Preparation of the EIS to replace the Fishing Bridge campsites continued. As part of the 1988 *Fishing Bridge DCP*, the NPS committed to replacing the 310 campsites removed from Fishing Bridge if occupancy at the other park campgrounds showed there was a need. Campground occupancy at the remaining campgrounds exceeded 95 percent in 1989, 1990, and 1991, and the park initiated plans to replace the Fishing Bridge campsites. In the early stages of this effort, the planning team recognized that new information about grizzly bear use of Yellowstone Lake spawning streams and the effects of the 1988 fires made the original proposal for replacement unworkable. Consequently, a

new proposal was developed for campsite relocation that was less ecologically damaging. The new proposal would locate 175 campsites at Norris, 100 campsites at Canyon, and 35 campsites at Grant. In 1993, a Denver Service Center design team began preliminary work on the proposal for campsite relocation including collection of engineering and topographic information. By late in the year, a complete draft of the EIS was submitted for internal park review.

Roads

Road improvement was the focus of a good deal of planning effort in 1993. The East Entrance Road Reconstruction EA was approved in May 1993, all necessary permits were obtained, and a contract for construction was awarded for the center segment of the road (Lake Butte overlook to Sylvan Pass).

On the west side of the park, design and resource data collection concentrated on reconstruction of the road segment from Madison Junction to Biscuit Basin. In late summer, this project took on added significance as material source problems on the East Entrance Road prevented simultaneous contracts from being awarded. As a result, reconstruction of the Madison to Biscuit Basin road segment would become the park's only project for award in 1994. Through significant efforts by a consortium of park, DSC, Region, and FHWA staff, the project was on schedule at year's end for obligation of funds in 1994. Park staff were reviewing a final draft of the EA, and design of the highway reached about the 50 percent stage.

Visitor Use Management

The major new start in 1993 was visitor use management. Winter visitation has increased dramatically from virtually none 30 years ago to more than 140,000 visits per season currently. In the joint *Winter Use Plan* (for Yellowstone and Grand Teton National Parks and John D. Rockefeller Jr., Memorial Parkway, 1990), a commitment was made to establish a Visitor Use Management process if winter visitation exceeded certain thresholds. In 1992-1993, use exceeded the *Winter Use Plan's* projection for the year 2000. With the assistance of RMRO and DSC, Yellowstone and Grand Teton National Parks completed a Winter Visitor Use Management Work Plan in November 1993. Both parks have implementation teams in place to carry out short-term tasks called for in the plan and to update the work plan based on their experiences in the 1993-1994 winter.

Bison

Bison generally remained within the park in 1993. Despite this reprieve, the NPS, USFS, Montana Dept. of Livestock, Montana Dept. of Fish, Wildlife and Parks, and Animal Plant Health

Inspection Service continued to write a long-term Bison Management Plan and EIS. Bison management planning is one of the current case studies in ecosystem management where agencies with fundamentally different objectives must work together toward common goals. During the year, the five lead and cooperating agencies agreed on an agency-preferred alternative and six other alternatives that would be analyzed in the EIS. The draft plan and EIS are scheduled for release by fall 1994 with a record of decision during 1995. In the meantime, management of bison continues under an interim bison management plan that was completed in late 1991.

Accessibility

Accessibility had a number of notable successes and failures during the year. The access coordinator resigned at the beginning of the season. Although this delayed completion of the parkwide accessibility evaluation (the 504 inventory), many park divisions took the inventory as it existed and began implementing corrective actions. An early emphasis of the inventory was concessions facilities and that division began to target stores, service stations, lodging, and food service facilities for upgrading as part of their capital improvement and maintenance programs. The Telephone Pioneers of America showed up in force in June 1993 and built a new trail and reworked sections of an existing trail in the Norris Geyser Basin, making the Back Basin area more accessible to handicapped individuals. The latter project was supported by the National Park Foundation's "Easy Access Park Challenge" program.

Transportation Study

In December 1991, Congress authorized a study of alternative modes of transportation in national parks as part of the Intermodal Surface Transportation Improvement Act. Three parks (Yellowstone, Yosemite, and Denali) were targeted, although the report should have service-wide implications. Initial and final drafts of the proposal study were reviewed during the year. In late July, office staff coordinated an exit survey to help understand visitor traffic patterns in the park. The study is due for completion by summer 1994.

Lamar

In cooperation with the Yellowstone Association and Yellowstone Institute, the planning office completed an environmental assessment regarding a sleeping cabin replacement project at Lamar. The Finding of No Significant Impact was signed in May 1993.

EIS on Wolf Reintroduction to Yellowstone and central Idaho

In 1992, Congress directed the U.S. Fish and Wildlife Service, in consultation with the NPS and USFS, to develop an EIS on reintroduction of gray wolves to Yellowstone National Park and central Idaho. In 1993, Congress continued funding, directing the final EIS be completed by January 1994 with the preferred alternative being within existing law. Yellowstone was a very active cooperator in the planning process.

Twenty-seven public issue scoping "open houses" were held in 27 communities in Montana, Wyoming, and Idaho, and seven national cities from April 6 through April 16, 1992. During the second phase of public involvement, 27 public alternative scoping "open houses" were held in the same 27 communities in Montana, Wyoming, and Idaho from August 3 through 14, 1992.

Based on this public involvement, five alternatives were formulated and displayed in the Draft EIS. These were (1) Reintroduction of Experimental Populations (Proposal), (2) Natural Recovery (No Action), (3) No Wolf, (4) Wolf Management Committee, (5) Reintroduction of Nonexperimental Wolves.

Public comment on the draft EIS was extended from July 7, 1993, to November 26, 1993. Over 1,500 people attended the formal hearings and about 700 testified. Over 160,000 comments were received on the draft EIS making it one of the largest responses to any federal action. The volume of responses illustrates the high public interest in wolf reintroduction. Preparation of the final EIS has begun with completion expected about the end of March and release to the public about the end of April 1994. A record of decision could be published about mid-June 1994.


Wolf education efforts included responding to 300 high school and university students and teachers, sending current information on wolves and their recovery. The resources interpreter presented 56 talks on wolf reintroduction to 1,620 people from March to December.

Other projects in 1993 included preparation of categorical exclusions for the MPC powerline undergrounding project at Grant and for reintroduction of the Arctic grayling into Cougar Creek. A carry-over project from 1992 was continuation of parkwide telephone modernization. In 1993, the entire project, save three cables, was completed. Office staff also participated in the design standards formulation, assisted with completion of the Backcountry Management Plan, and prepared a draft MOU for wetlands banking. The project tracking/status system was revived and back on course following the resignation of the staff person in charge of that function. Through the clearance system, six projects ranging from plugging geothermal research wells to changing use on the Bunsen Peak road were approved in 1993.

SUPERINTENDENT'S ANNUAL REPORT

YELLOWSTONE NATIONAL PARK

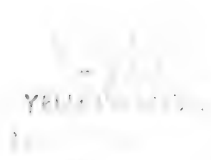
1994



Michael V. Finley, Superintendent

TABLE OF CONTENTS

<u>DIVISION</u>	<u>PAGE</u>
Administration	1
Concessions Management	5
Interpretation	11
Maintenance	20
Public Affairs	30
Resource Management Operations and Visitor Protection	39
Yellowstone Center for Resources	50



ADMINISTRATION

During 1994, Marcia Blaszak served as Administrative Officer until October. The position was vacant through the end of the year with Georgia Amundson, Contracting Officer, serving as Acting.

The division budget for FY 94 was as follows:

ONPS	\$2,110,000
VIP	<u>10,000</u>
TOTAL	\$2,120,000

Total FTE for FY 94 was 42.7

Information Systems Management

Telephone Service

In 1994, Yellowstone's telephone system continued to expand and upgrade as funding and time allowed. The Mammoth PBX (Public Branch Exchange) terminal had to be expanded by one card (@ \$6,000), 16 lines, and associated wiring. Additional expansion is planned for 1995.

The Northeast Entrance and West Entrance received Meridian Systems. These are automated PBX units that expand one line into four lines and one intercom line along with number storage and quick dial features.

Wiring of new facilities was carried out at the new Fire Cache in Mammoth and the Old Faithful Emergency Building. They were wired for telephone, computer interconnects, and radio loops. Ongoing upgrades, additions, move changes, and programming of existing equipment still comprise the majority of our time.

Radio System Planning

The radio system continued to expand and upgrade. The Purple Mountain Solar Repeater was completed to serve Channels 5 and 6 in the Madison area. A new travel information station was added at Fishing Bridge to provide travel advisory information for the East Entrance road project. Ongoing efforts continued for compliance with the new narrow band radio requirements. All new purchases (46 portables and 49 mobiles) met this criteria. A target date of year 2005 is still set for total compliance with preliminary cost estimates at \$2,000,000.

Support was provided to neighboring parks Big Horn Canyon and Grant Kohrs for yearly maintenance, upgrading, and a new travel information station.

The majority of our time and resources is spent with the constant maintenance and reinstallation/relocation of existing equipment.

Alarm and Security Systems

Growth and improvements have continued with a new program being installed in the Communications Center alarm receiver. Additional alarms and dialers have been added to various water plants, sewage plants, lift stations, and new facilities to monitor critical functions. We continue to provide support and programming for TWRS in their effort to convert to "Radionics" alarm equipment that is compatible with the National Park Service.

Automated Data Processing

The number of personal Desktop and Portable computers continued to grow at a rate of approx. 15% in 1994. It is now at 242 PCs, up from 210 PCs last year. User support and training consumed the major portion of the ADP workload. Repair and upkeep of the computer hardware seems to be growing exponentially as we get more new equipment and much of our other equipment is getting older. Software program upkeep and development, including migration from the Datapoint system to PC systems, has removed much of our need for Datapoint terminals and processors. AFS II (Automated Finance System) was installed and replaces our old cost system. Network and E-mail services have also grown in 1994.

The Datapoint system will still be required through 1995 for the Supply Inventory program, and some PAYPERS and Budget printing, but the other few remaining programs should be converted to PCs within this fiscal year. The implementation of the inhouse backcountry's computerized reservation system with eight remote sites should be completed by the end of May 1995.

Fiscal

The following are the budget figures for FY 94:

ONPS Base Funding	\$14,497,100
Fee Money	3,390,500
Fee Collection Money	520,000
Special Funding	2,649,700
School Funding	730,000
Fishing Fee Money	<u>326,800</u>
Total	\$22,114,100

The special funding includes money received for public health, VIPs, drug prevention, air quality, cyclic, repair/rehab, wolf reintroduction, and fire recovery.

Personnel

A total of 60 vacancy announcements were issued during 1994. Approximately 1,700 personnel actions were processed.

Personnel participated in four orientations for seasonal employees and also held four general information meetings throughout the park to talk about changes in hiring procedures.

Odd Osteros transferred to the Department of Air Force in March 1994. Kevin Hermanson transferred to Fish & Wildlife Service in November 1994. Joanne Timmins arrived as Personnel Officer in November 1994.

OpOp placements: Laura Joss, Joanne Timmins

Early Retirements/Buy-Outs: Bill Foster, Don Sessing, Joe Halladay, Curtis Anderson

Vanessa Ford participated in a Service-wide meeting of coordinators of interpretation of new seasonal regulations held in Boston.

Procurement

Our Contracting Officer's Warrant has been upgraded from a Level III to a Level IV.

Over 4,700 requisitions were processed totalling approximately \$6.8 million as follows:

27 contract actions reported on SF-279s (one contract for \$151,800 was awarded to a minority owned business).

11 new awards	
6 supply contracts	\$ 690,862
5 construction	\$1,361,609
16 contract modifications	\$ 144,009
	<u>\$2,196 480</u>

<u>Small Purchases:</u>	<u>Quantity</u>	<u>Dollar Amount</u>
Purchase Orders	1,692	\$3,146,527.20
Blanket Purchase Orders	43	368,381.20
Third Party Drafts	2,588	866,019.48
Imprest Fund	578	14,303.52
FEDSTRIP	178	<u>222,246.00</u>
Total	5,079	\$4,617,477.40

Supply Center Activities

Total Sales - \$932,671.48. The annual physical inventory of the Supply Center reflected a loss of \$1,365 or less than 1% of total sales.

The supply operation recycled 68 bales of corrugated cardboard, totaling 10,135 pounds.

Property Management Functions

	<u>NPS</u>	<u>TWRS</u>
Reports of Survey	83	82
Report of Excess Property	11	0
Report of Excess Property for Sale	31	36
Transfer of Property	15	0

Annual quarters rates (CPI adjustments) were implemented in May 1994.

Physical inventory of capitalized property was conducted in December 1994.

Current Property Status

	Number of Items	Value
NPS	11,046	\$22,133,770
TWRS	<u>3,194</u>	<u>5,881,194</u>
	14,240	\$28,014,964

In September 1994, GSA came to Yellowstone National Park to conduct a GSA auction. There were 148 items sold for \$225,261.

CONCESSIONS MANAGEMENT

Staffing

Chief, Concessions Management, GS-1101-14/2, Edna Good
 Asst. Chief Concessions Management, GS-1101-12/5, Judy Churchwell
 Conc. Spec. (Spec. Accounts/projects), GS-1101-11/3, Mary Murphy
 Conc. Spec. (Evaluation/Pricing), GS-1101-7/6, Barb Riley
 Conc. Spec. (Eval/compliance), GS-1101-9, (**vacant**)
 Conc. Asst. (Ofc.Mgr., financial asst.), GS-1101-6, (**STF**) (**vacant**)
 Conc. Clerk (Clerical) (**PPT**, 3-day/wk) GS-1101-5/3, Debby Young
 Sanitarian, GS-0688-11/2, Sara Roser (**STF**)
 Engineer, **Intermittent**, GS-0830-7/1, Mary Hudson

FTE: 9

Budget

ONPS:	\$280,000
USPS:	<u>23,100</u>
TOTAL:	\$303,100

The TWRS oversight account is used on a limited basis for travel or specialized materials used in direct support of the special account projects; a trip to Denver to review drawings of Snow Lodge with Regional officials, SHPO, etc., would be appropriate; purchase of AUTOCAD to prepare utility maps for maintenance agreements/projects.

General operations

Gross revenues earned by all concessioners exceeded \$67 million in 1994. Of that amount, approximately \$9 million was captured into special accounts for making capital improvements to government-owned facilities assigned to concessioners and for major cyclic maintenance authorized by contract.

Working with architects and engineers, the concessions staff was involved in planning and review of proposals, monitoring and coordinating projects for the Snow Lodge project, the Old Faithful Ranger Station/Medical Clinic, duplex for medical staff at Lake, Hamilton Stores Canyon landscape project, service station restroom renovation (Tower and Canyon), historic preservation work at Old Faithful Inn and Roosevelt Lodge, Canyon Village interior design, Mammoth Clinic remodel, Mammoth duplex design, Mammoth tri-plex remodel, new sewer system at Roosevelt Lodge, and numerous smaller projects.

The concessions staff approved concessioner rates after conducting annual comparability studies. Rates studied included food service, overnight accommodations, tours and rental rates for boats, horseback riding, snowmobile rentals and tours,

snowcoach tours, bus tours, gasoline, mechanics services, vending, wood sales, laundries, and medical services.

Preopening and two formal inspections were conducted in all concession facilities during the year. There are 2,179 guest rooms, a marina, 3 horse operations, 23 food service operations, 22 general stores and gift shops, medical services (including a hospital and 2 clinics), a recreational vehicle park, 4 campgrounds, 3 public showers, 4 laundry facilities, 7 service stations, 35 employee dormitories, and employee dining rooms and recreational facilities parkwide.

Orientation programs were presented to approximately 3,000 seasonal concession employees during May and June. A uniformed representative of the division explains NPS philosophy and mission and discusses safety and other aspects of living and working in Yellowstone.

In addition to the regular workload, Judy, Mary, and Edna each played key roles on three different Servicewide work groups to help develop new procedures for carrying out the concessions program under the NPS reorganization and the legislative changes which were pending during 1994. A task directive has been written for development of a Commercial Services Plan for the park. This will be a joint planning effort between Grand Teton and Yellowstone, the System Support Office, and the Concessions National Program Center. It will be a prototype, expected to set the standard for concession planning documents Servicewide.

Concession Contracts

TW Recreational Services, Inc. - By contract, in lieu of franchise fees and building use fees, 20 percent of annual gross receipts is deposited to special accounts. These funds are for the specific purpose of making capital improvements, new construction, or major cyclic maintenance (or replacement) of government-owned facilities and equipment assigned to the concessioner. The Yellowstone contract authorizes specific concessioner positions to be funded from the cyclic maintenance account, i.e., fire/safety personnel, many engineering division positions, and craftsmen utilized to maintain historic structures and furnishings.

During 1994, TWRS grossed over \$41 million. Major projects included \$476,500 in safety and sanitation improvements; \$280,000 to purchase a new scenic cruiser to meet U.S. Coast Guard and park safety requirements; \$488,000 was invested in employee housing; \$315,000 was spent on improvements to historic structures and to the development of historic structures reports; over \$500,000 was spent on improvements to guest facilities throughout the park. \$3.8 million was spent on cyclic maintenance of government-owned facilities, equipment

replacement, historic preservation and trail maintenance. \$1.6 million was invested in an interest-bearing account for future construction of a new Snow Lodge to replace the existing substandard facility (annual investments will allow construction of the Snow Lodge beginning spring 1997). Approximately \$500,000 unspent in 1994 is obligated for 1995 projects. A professional outside audit was conducted on the special accounts and no irregularities were found.

A contract amendment which authorizes TWRS to manage the four major campgrounds in Yellowstone (described in previous annual reports) evolved over the year and now includes a commitment of \$3.5 million (1994 dollars) for improvements to guest facilities at Canyon Village. These investments will be made over a three-year period beginning in 1996. In addition, the concessioner will pay (into a campground account) 20 percent of annual gross receipts. These funds will be used for capital improvements and major cyclic maintenance to campground facilities. In addition, the concessioner is obligated to make capital investments of \$600,000 to develop a computerized campground reservation system and make other campground improvements. The new reservation system became operational on April 1, 1995. In spite of NPS agreement to remove Bridge Bay campground (one of the campgrounds assigned to TWRS) from the Servicewide reservation system (MISTIX), the necessary administrative work was not accomplished at the Washington level, resulting in TWRS having to leave Bridge Bay off their reservation system, but still provide all the maintenance and custodial duties during the 1994 and 1995 seasons. This is expected to be corrected at the end of the 1995 season and Bridge Bay added to the TWRS reservation system.

Even though the amendment had not been finalized, TWRS managed the campgrounds and met their financial commitments. Occupancy of these four campgrounds increased from 83 percent (when they were under NPS management) to 89.5 percent.

In 1994, TWRS entered into a sales agreement with ARAMARK. The sale involved all seven park areas in which TWRS manages concession operations. After months of agonizing negotiations with the NPS and NPS-proposed amendments to all the contracts involved, ARAMARK withdrew their offer. This sales-approval exercise was the reason the execution of the Yellowstone amendment was delayed, even though it has received approval from the Washington office.

Hamilton Stores, Incorporated (HSI) - In 1994, HSI completed a \$400,000 landscaping project at Canyon Village. The project included correcting existing erosion and drainage problems, placing concrete pavers in front of the Canyon General Store, landscaping the area, replacing curbing, rebuilding wooden stairways, and purchasing benches for the area. HSI replaced the floor at the Canyon Photo Shop and added a handicapped accessible

restroom; remodeled the Canyon General Store fountain including installation of a new floor, new ceiling, new cashier stand, and new light fixtures; initiated plans to remodel the Old Faithful BAC Store fountain area including a new floor, upgraded kitchen equipment, and other improvements to meet U.S. Public Health Service codes. They installed new flooring, fixtures, and walk-in coolers in the Mammoth General Store; remodeled facilities and constructed ramps to accommodate ADA requirements at the Old Faithful BAC Store, the Lake General Store, the Old Faithful Lower Store, and the Old Faithful Photo Shop; remodeled the Grant Village dorm to add ADA restrooms and entrances to accommodate all concessioner and NPS employees who utilize the dorm for the cooperative recreation program. They continued their exterior sign replacement program and converted the Mammoth Christmas Shop to a Yellowstone Nature Store. They removed employee rooms from the second floor of their general office building at West Yellowstone and converted the space to accommodate approximately 16 offices; constructed an apartment building in West Yellowstone for their park employees; relocated their maintenance/carpenter shop to the town of West Yellowstone and converted the space into large employee orientation complex.

HSI has made a real effort to bring their facilities up to ADA standards. In addition to those accomplished, they have spent significant money on various design effort to make the Mammoth General Store accessible; however, NPS and SHPO cultural compliance has thwarted all their efforts. They have had a lift system designed; however, the compliance issues have still not been resolved. For HSI to comply with accessibility laws, some compromise will have to be reached.

In November 1994, franchise fee reconsideration was initiated by the National Park Service. After much research and several meetings on the subject, this matter is expected to come to closure within the month. Once these fee issues are resolved, the contract will be amended to reflect appropriate agreements and adjust the building program outlined in the contract.

Gross revenue for 1994 exceeded \$20 million.

Yellowstone Park Medical Services (YPMS) - During 1994, YPMS was rated unsatisfactory for contract compliance and satisfactory for operational performance, which resulted in an annual overall rating of marginal. Their primary failure in contract compliance had to do with their failure to deposit the required funds in their special account (in lieu of building use fees), and the very late receipt of their annual financial report. Delays in the building program were also elements of the unsatisfactory rating for contract compliance. The concessioner funded the design of the combination Ranger Station/Medical Clinic at Old Faithful which is currently under construction. A duplex has been designed to house medical staff at Lake and will be

constructed during the 1995 season. Standards and compliance requirements imposed by the Service have caused the bids for construction of the duplex to be double that amount estimated by the contract. In order to accomplish this investment and to meet our mandate to ensure the concessioner a "reasonable opportunity for profit on their operation as a whole", it will be necessary to defer some of the other investments required by the contract. They have purchased two new ambulances which will be in service for the 1995 season.

The National Health Service Corps (NHSC) agreed to fund the doctor at Mammoth Clinic for 1995; however, that funding source is threatened by the downsizing of government and the resulting budget cuts. Dr. Pamela Farmer resigned and left the park in December 1994, to be replaced by Dr. Michael Kimbro. The NHSC recently completed a study of the economic viability of the Mammoth Clinic to justify funding for the physician. Preliminary results indicate that clinic rates are too low. During the current operating year, the medical services will be reviewed by an outside consultant to ensure that they are operating in compliance with applicable regulations and standards for the industry. Although total revenue increased in 1994, YPMS suffered a loss of over \$56,500.

By contract, the government provides the doctor's residence at Mammoth, and maintains it, at no cost. Other facilities assigned, Lake Hospital, Mammoth Clinic, nurses dormitory, and several apartments and trailer sites are maintained by YPMS. Annually, in lieu of building use fees, YPMS places \$39,000 (indexed annually) in a special account for the specific purpose of making capital improvements and major maintenance to the government-owned facilities assigned to them. There is no franchise fee.

Yellowstone Park Service Stations (YPSS) - This is a joint venture agreement between the National Park Service and Hamilton Stores, Inc. (joint owners of all gasoline service stations, repair services, equipment, housing, etc.) and TWRS (who manages the National Park Service interests). The joint venture agreement expires late 1996.

EPA regulations require that underground storage tanks meet EPA standards by December 1998, and that obsolete tanks be removed by that date. All tanks utilized by YPSS have already been brought up to standard except those at Fishing Bridge and Old Faithful. Planning is underway to select a site and design a new station for Old Faithful (consistent with the Old Faithful Development Concept Plan).

The Development Concept Plan for Lake/Bridge Bay selected a site for a new station at Lake when the station/repair shop at Fishing Bridge are removed. The scope of services necessary and the suitability of the selected Lake site are under review.

Employee housing will be removed from the Fishing Bridge area and YPSS will be required to construct employee housing in the Lake area.

As new stations are built, state of the art dispensers will be installed. At older facilities, not designed for self-service, an attendant has been stationed at islands to assist visitors with information and traffic control. Restrooms at Tower and Canyon stations are currently being renovated to meet accessibility standards.

All investments by YPSS are shared equally between the National Park Service and HSI. Funds are obtained from sharing profits derived from YPSS operations. 1994 gross receipts were over \$4 Million.

Snowcoach Permits - In November, a prospectus was issued for renewal of snowcoach permits. All five existing satisfactory operators submitted responsive proposals and will be awarded a four-year authorization to continue winter transportation services. Even though we had stated in the prospectus that up to seven permits would be issued, we have decided to hold commercial winter use at existing levels pending the results of the Visitor Use Process and management decisions regarding overall winter use management. A special account will be set up to capture franchise fee payments of 4 percent of gross receipts. These funds will be used for capital improvements and/or major cyclic maintenance of government-owned facilities which directly support the winter services authorized (warming huts, restrooms, etc.)

Snowmobile Permits - In November, a prospectus was issued to solicit proposals for guided interpretive snowmobile tours. The prospectus stated that up to 12 permits could be issued; however, 10 operators were selected for a 4-year period. Previously, 10 operators were authorized on commercial use licenses. Special accounts will also be included in these concession authorizations to be managed as described above.

INTERPRETATION

Chief of Interpretation - Ron Thoman, GS-025-14
Supervisory Park Ranger, Operations - Tom Tankersley, GS-025-12
Supervisory Park Ranger, Planning-Media - Linda Young, GS-025-12
Supervisory Park Ranger, Support Services - Greg Kroll, GS-025-11

BUDGET

In FY 94, the Division of Interpretation spent \$1,120,601 of the park's total budget of \$20,856,821. In addition to \$867,000 in ONPS funds and \$170,000 in Fee Enhancement funds, the division received Fishing Permit Fee money (\$42,809), Concession Operated Campground savings (\$20,000), carry-over of FY-93 Fee Enhancement funds (\$31,292), and Ranger Careers and buyout support increases (\$11,200). A reduction of \$21,700 was made for the lapse of Joe Halladay's position. In addition, the division spent \$1,150 of VIP funds.

During FY 94, the Yellowstone Association (YA) continued to play a major role in support of interpretive operations--a total of \$168,926. Included in these funds were \$29,834 for interpretive operations support, \$15,000 for naturalist assistants at West Thumb, and \$124,092 in direct grants for such projects as Artists-in-Residence, exhibit planning and production, publications, and a summer intern. In addition, YA handled nearly \$70,000 for the division in restricted account expenditures resulting from donations and income to support Expedition Yellowstone, iMAGiNE Yellowstone, the Yellowstone Today visitor information newspaper, and funds for slide processing, the Norris Ranger Museum, and wolf interpretation.

The final piece of the FY 94 Interpretation budget included \$27,020 in Maintenance Division funding to upgrade equipment for nine park amphitheaters and \$60,000 in regional Repair/Rehabilitation money for the Norris Geyser Basin Museum.

The total funds expended for Interpretation in FY 94 from all sources equaled \$1,445,122. Significant developments included paying buyout and lump sum costs (previously borne by the regional office) for Joe Halladay as well as losing lapse money for the position and absorbing a significant proportion of the cost of Ranger Careers implementation. We received \$11,200 to help defray some of these costs.

PERSONNEL

In FY 94, the division had 18 permanent positions utilizing 14.90 of the total 32.79 FTE--see the Annual Interpretive Program Report for the permanent staff list. The division had 53 seasonal positions including 40 summer, 3 environmental education, and 8 winter positions, as well as two full-time

temporary employees working as Environmental Education Assistant and clerk-typist. Of the total park FTE (480.70), the share devoted to Interpretation equaled 6.81%.

In addition to NPS staff, the Division of Interpretation benefitted from the services of 25 Volunteers-in-Parks and 65 other positions including 49 YA sales clerks (working side-by-side with ranger-naturalists in the visitor centers), 3 naturalist assistants employed by YA, one SCA at Mammoth, 4 Artists-in-Residence, 2 Artist-in-Residence program docents, 1 program assistant for the iMAGiNE Yellowstone children's art show, 3 Planning and Media Branch support positions, 1 student intern from Montana State University, and 1 Kodak employee. These volunteers and YA employees, working directly in the various interpretive functions of the park, constituted an additional 15.72 FTE--slightly less than the division's total seasonal FTE of 17.89.

TRAINING

Tom Tankersley coordinated the new employee seasonal training and the annual division-wide interpretive training which were held during the last week of May and the first week of June at the YACC camp. Yellowstone Association employees joined the group for the first day of division-wide training and employees from other divisions and nearby federal/state agencies sat in on sessions during the second week. The training theme was a continuation of the previous year, "Back to Basics II" with an additional focus on "Compelling Stories Compellingly Told." Sessions focused on the basic foundation of interpretive principles and a special focus on the identification of Yellowstone's compelling stories and exercises in the presentation of these stories.

During December, a two-day training session was held for the staff focusing on winter issues and reinforcing basis skills. The TW Services snowcoach operators and snowmobile guides participated in this training as did Grand Teton interpreters. In addition, for the first time, the interpretive staff offered two two-day sessions to commercial snowcoach and snowmobile operators from West Yellowstone and Flagg Ranch.

Ranger-Naturalist Cathy Petrick attended the 40 hour-course "Orientation to the National Park Service" in October. Cathy, along with Ellen Petrick-Underwood, Rich Jehle, and Skip Meehan (Planning and Media Branch) attended Interpretive Skills training in September. Rich Jehle also represented the park at the Montana Environmental Education Conference in Billings in March. In November, Greg Kroll represented the division and the park at the 6th National Wilderness Conference in Santa Fe.

DISTRICT OPERATIONS

This was the first full year operating under the seven-district organizational structure initiated in 1993.

The 1993-94 winter program consisted of traditional services including: full operation of the Old Faithful and Mammoth Visitors Centers, and warming huts at West Thumb, Fishing Bridge, Canyon, and Madison. Staff included the District Naturalists and seven seasonals. The winter program for 1994-95 was of the same scope as the 1993-94 program and staffing consisted of the District Naturalists, one permanent front-line naturalist, seven seasonal naturalists, and four volunteers.

The 1994 summer program consisted of the following services: Mammoth Visitor Center, Norris Geyser Basin Museum, Old Faithful Visitor Center, Grant Village Visitor Center, Fishing Bridge Museum, and Canyon Visitor Center open daily from 8 a.m. until 7 p.m.; evening campfire programs offered nightly at Mammoth, Norris, Madison, Grant Village, Bridge Bay, Fishing Bridge, Canyon and the Old Faithful Visitor Center; evening campfire programs were offered on an average of three nights per week at Tower; staffing limitation prevented offering any programs at Indian Creek, Lewis Lake, or Pebble Creek.

All areas, except Old Faithful, offered two two-hour guided walks daily. Old Faithful offered four two-hour guided walks daily. Because of staffing limitations, no half-day or full-day hikes were offered during the season. Roving interpretation was concentrated on those high-visitation, fragile resource areas where resource protection and visitor safety are of highest concern. The areas of concentration included: Mammoth Terraces; Norris Geyser Basin; Upper, Middle, and Lower Geyser Basins; West Thumb Geyser Basin; Fishing Bridge and Mud Volcano; and the Canyon Rims.

This season, the West Thumb Warming Hut was opened as a Yellowstone Association sales facility. Because of the need to increase staffing visibility at West Thumb, the Yellowstone Association funded two positions which worked side-by-side with the ranger-naturalists.

This season offered the unique opportunity to devote one position, which "floated" throughout the park, to the interpretation of wolves and the wolf re-introduction program. Because base funding was not available to support such a position, by his own initiative, Rich McIntyre, author and 20+ year seasonal veteran of the National Park Service, personally raised the funds from private sources for this position in which he served in a wolf interpretation capacity throughout the season.

The Division re-established the tradition of submitting Annual District Reports. These reports reflect, in greater detail, the operations of each district during the fiscal year. These reports can be found in the Yellowstone archives.

PERSONNEL ACTIONS - OPERATIONS

There were a number of personnel actions and temporary assignments in interpretive operations during the year because of a retirement, a resignation, a recruitment to fill one vacant position, the establishment of one permanent position and one term appointment, and the service-wide implementation of "Ranger Careers."

Because of the resignation of Steve Eide in 1993, Sandy Snell-Dobert was Acting Mammoth District Naturalist from January through April. In April, Roger Anderson was re-assigned from Grant Village to the position of Mammoth District Naturalist. Matt Graves, a "Reinstatement Eligible," was assigned to the Grant District Naturalist position in April. Cathy Petrick, an "Outstanding Scholar," was selected as a front-line naturalist at Mammoth in April.

In May, Ellen Petrick-Underwood, an "Outstanding Scholar," was selected to fill the Environmental Education Specialist position, which had been vacant since 1991. Joe Halladay, who had been in Yellowstone as a District Naturalist since 1971, took advantage of the service-wide retirement buyout in May. Sandy Snell-Dobert was temporarily detailed (May through September) from the Acting Mammoth District Naturalist position, which has been filled by Roger Anderson, to Old Faithful as Acting District Naturalist. Rich Jehle, who had been serving as the Environmental Education Coordinator in a temporary capacity, was reassigned as the Acting Norris District Naturalist from May through September.

In October, Rich Jehle was converted from a temporary appointment to a term appointment and assigned to the Environmental Education Program.

Jeannine Montgomery resigned from the position of Canyon District Naturalist in October. In July, a service-wide recruitment announcement was issued to fill the existing vacancy of the Old Faithful District Naturalist and the anticipated vacancy of the Canyon District Naturalist. Through this recruitment effort, Dan Hand, Assistant Chief of Interpretation at Jefferson National Expansion Memorial, and Neysa Dickey, Chief of Interpretation at Grant Kohrs Ranch National Historical Site, were selected for the Old Faithful and Canyon District Naturalist positions, respectively.

In October, Sandy Snell-Dobert found herself, for the first time during the calendar year, in her assigned position as Norris District Naturalist. Because of Sandy's ability to fill the void created by the vacancies at Mammoth and Old Faithful and coordinate a smooth transition when these positions were filled, Sandy was selected to represent Interpretive Operations at the annual conference of the National Association of Interpreters in November.

As a result of the Ranger Careers initiative, the following upgrades went into effect on July 10: Assistant Chief of Interpretation, Operations, from GS-025-11 to GS-025-12; Mammoth, Norris, Grant, Lake and Canyon District Naturalists positions from GS-025-07 to GS-025-11; Mammoth Naturalist from GS-025-05 to GS-025-09.

BRANCH OF INTERPRETIVE PLANNING AND MEDIA DEVELOPMENT (Nonpersonal Interpretive Services)

Nonpersonal interpretive services continued to reach Yellowstone's 3 million annual visitors and, via outreach, hundreds of thousands of the general public. The Branch produced a range of new interpretive media while revising an array of existing media (e.g., the park newspaper, self-guiding trail brochures).

Staffing

Implementation of Ranger Careers affected the grades of every branch employee who had been in the GS-025 series. All of the former GS-025-7 positions became GS-9s on July 9 and were classified out of the 025 series. The Assistant Chief of Interpretation for Planning and Media became a GS-025-12 in September.

Stuart Meehan joined the branch staff, filling the Exhibits Specialist position (GS-1010-07/09) in October. Ginny Cowan continued as Publications Specialist; this position was classified into the Writer/Editor series, GS-1082-09. Dave Cowan completed his one year detail to the arts program and returned to the branch as a Visual Information Specialist, GS-1084-09. Jim Peaco continued to function as Park Photographer in a position now classified GS-1060-09. Ron Harvey continued as the Audiovisual Technician, GS-0856-09, although a serious illness caused him to be off the job from approximately mid-May through late August. Diane Papineau filled in as an exhibits specialist during the 9 months of the calendar year in which Dave Cowan was on detail, and continued in a media generalist capacity beyond that time to complete a number of media projects. This position was supported by a grant from the Yellowstone Association.

Interpretive Media and Visitor Use

Publications, exhibits, and audiovisual media were used by the vast majority of visitors, but we presently have limited capability to quantify this use. A sampling of the known media distribution figures follows:

Park Newspaper - annual distribution 1,000,000
Winter Snowmobile Guide to Yellowstone - 35,000
Yellowstone Guide (mailout pretrip planning publication) - 50,000
Trail Guide Brochures (Upper Geyser Basin, Canyon, Mud Volcano, West Thumb Geyser Basin, Norris Geyser Basin, Fountain Paint Pot, Mammoth Hot Springs) - 1,000,000 total
Discover Yellowstone - (magazine of scheduled interpretive activities) - 25,000
Dayhike Sampler - 16,000
Site Bulletins (variety of subjects and regulatory/management concerns) - 200,000
Junior Ranger newspaper - 9,000
Museum/Visitor Center exhibits - 1,900,000
Wayside Exhibits - 2,900,000+
Photographic Services - 1,500

Interpretive Planning

Alternative sources of funding for interpretive media projects were pursued vigorously in 1994. These included the Yellowstone Association's annual special grants program, the Challenge Cost Share Program, the Department of Defense Legacy Program, and Rocky Mountain Region's Interpretive Media Repair/Rehab Program. Of these, the Yellowstone Association and RMR Repair/Rehab Program provided funding for exhibit and publication projects.

Publications

Four issues (winter, spring, summer, fall) of the park newspaper, *Yellowstone Today*, were produced. A special supplement to the summer newspaper highlighting interpretive and educational opportunities in the Greater Yellowstone Area was produced again in 1994. Foreign language translations (French, German, and Japanese) of the park folder/map were produced and distributed at the entrance gates; foreign language newspaper "wrappers" were under development and will be available in 1995. Revisions were made to the *Yellowstone Guide*, the *Yellowstone Winter Guide*, seven self-guiding nature trail brochures (Upper Geyser Basin, Canyon, Norris Geyser Basin, Fountain Paint Pot, West Thumb Geyser Basin, Mud Volcano, Mammoth Hot Springs), the parkwide *Dayhike Sampler*, and thirteen site bulletins spanning a range of resource, management, and visitor safety concerns.

New publications included a site bulletin describing the ecological consequences of the illegal introduction of lake trout into Yellowstone Lake, and a low-cost map of Yellowstone and Grand Teton National Parks for use as a convenient, readily updatable tool at visitor centers and ranger stations.

Publications used in interpretive training were also prepared by Branch staff including training resource notebooks and agendas.

Exhibits

Planning and design for new exhibits for the wings and breezeway of Norris Geyser Basin Museum was completed and production began in September with an anticipated installation in spring 1995. The Yellowstone Association provided a grant for the development of orientation and interpretive trailside exhibits for the geyser basin self-guiding trail system; planning and design began in October.

New interpretive media for the Canyon Visitor Center continued to move through the conceptual planning stage while structural modifications to the building were accomplished. By year's end, the amount of money available to reconfigure the exhibit and theater spaces had not been identified; further media planning awaits this information.

Thirty-five trailhead wayside exhibits were moving through various stages of planning including map development and preliminary text and panel layout.

Two wayside exhibits highlighting fish-watching opportunities at the Buffalo Ford viewing area were in preliminary planning/design.

Audiovisual Technical Services

Ron Harvey was unable to perform the duties of this position for one quarter of the year due to a serious illness. Unfortunately, the illness and recovery period coincided with the summer season, the busiest time of year for AV system maintenance and AV cache use. Staff from the Telecommunications Office were able to provide basic amphitheater setups at the beginning of the summer, but other functions were largely suspended or accomplished only sporadically.

The Division of Maintenance provided end-of-fiscal-year funds for the purchase of new campground amphitheater speakers, amplifiers, mixers, and microphones. These arrived late in October and will be installed for the 1995 summer season.

Ron traveled to Badlands National Park in April to install a new campground amphitheater sound system.

Special events for which AV services were provided included the visit of Secretary of Interior Bruce Babbitt in May, Superintendent Bob Barbee's farewell in August, a fisheries symposium in September, and the community Christmas tree lighting in December.

Photography/Video Services

Park photographer Jim Peaco continued to manage Yellowstone's reference collection of slides, photographs, movie and video footage as well as provide a range of photographic and video services. The increasing demand for services exceeded his ability to respond; the number of requests surpassed 1,500. The workload has become complex with the development of major interpretive media and the need for photo documentation of historic resource management events, such as wolf reintroduction in Yellowstone.

Artists-in-Residence Program

The Artists-in-Residence Program was conducted once again in the Madison Museum. Funding was provided by the Yellowstone Association. From June through Labor Day, four artists provided public activities of various types, and docents staffed the Museum and contributed programs/activities as well. Approximately 31,000 visitors passed through the Museum; program attendance totalled 3,900 for the summer.

Imagine Yellowstone

For the sixth consecutive year, the iMAGiNE Yellowstone Art and Writing Festival was celebrated. The 1994 exhibit theme was "From Geology to Landscape", and this year's exhibit, presented at the Canyon Visitor Center, included a retrospective of the outstanding works of the previous five years.

Yellowstone Association/Yellowstone Institute

Since its establishment in 1933, the Yellowstone Association (YA) has helped support the park's interpretive and educational programs. IN FY 94, the Association provided \$460,060 in aid to Yellowstone National Park, supplementing funding for the Division of Interpretation, providing free publications to park visitors, and providing information assistance at park visitor centers.

The Association funded an interpretive newspaper supplement, distributed to over 2.5 million visitors, which highlighted interpretive facilities and services. Once again, the Association funded printing of *Yellowstone Science*, which makes the progress and results of current park research projects available to the public. The Association funded translations of the park folder into French, German, and Japanese. Finally, the

Artists-in-Residence program and *iMAGiNE Yellowstone*, the student art program, were underwritten by the Yellowstone Association.

On a longer-term basis, the Association is helping to fund a major renovation and replacement of exhibits in the Norris Geyser Basin area.

Finally, the Yellowstone Institute again offered over 80 classes to more than 800 participants (including 28 NPS employees who attended classes tuition-free). New, rustic sleeping cabins, funded by YA, were built to replace the deteriorating ones formerly at the Lamar Institute site. This project included sleeping and staff cabins, staff and director's cabins, and a new office. These same cabins are used by *Expedition Yellowstone* (the NPS-run residential environmental education program) in spring and fall.

MAINTENANCE

Tim A. Hudson - Chief of Maintenance

Jack E. Roberts - Assistant Chief of Maintenance

General

The Maintenance Division's workload in 1994 again focused on the park's major infrastructure problems--roads, utility systems, buildings, and housing. Work with removal of old hazardous materials (paint thinners, etc.) and underground storage tanks is demanding more time and focus, and the residue of 100+ years of visitors and activity still needs much work. Compliance requirements such as ADA, hazardous materials abatements, and NFPA requirements affect park operations and budget priorities. The lack of a viable cyclic maintenance program is still increasingly evident, especially in roads. Even though Craig Pass is complete and the East Entrance and West side road projects are underway, the estimate to bring the roads up to standard now exceeds \$300 million.

A recycling program continues in conjunction with our park concessioners, Hamilton Stores and TW Services. Drop-off points for glass and aluminum exist in housing areas throughout the park, and drop-off points for aluminum exist in many of the campgrounds. In 1994, over 400 tons were recycled parkwide.

The division assisted with the wolf introduction program by erecting the wolf pens and being an active part of the incident command team for this project. The division was very active with the Department of Energy and will receive an alternate energy vehicle in 1995 that runs on biodiesel.

Fiscal Operations

The Maintenance Division operated from a number of fund sources as follows:

ONPS	6,465,300
FEE	2,225,345
Repair/Rehab/Cyclic	1,802,000
Day Labor	1,167,419 (spent)
Dept. of Energy	87,508 (spent)
FLHP (day labor only)	231,500 (spent)
School Maint.	114,400
Housing Initiative	194,159 (spent)

Total FTEs for FY 94 - 219.29

Maintenance FTE Ceiling - 218

Buildings and Utilities

A variety of funding sources was pooled to accomplish numerous major building, utility, and housing projects. Funding sources included repair/rehabilitation, cyclic, and housing initiative projects as well as a grant from the Department of Energy and ONPS funds.

The majority of this rehabilitation and construction work was funded by these various special sources and was performed by the Mammoth Craft Shops on a parkwide basis. Due to base funding levels, only critical work orders involving necessary repairs were performed, and preventive maintenance has been deferred for another year.

The park has been successful in competing for Department of Energy grant funds, but they were not available until late in the fiscal year. Work did begin on the parkwide replacement of numerous overhead doors with highly insulated doors; insulating and heating upgrades at the Lake, Grant, and Canyon Maintenance shops, and the old water treatment plant building at Canyon; and various upgrades to heating systems at the Canyon and Old Faithful Visitor Centers and buildings 36, 23, and 27 in Mammoth.

Housing initiative funds were used to begin construction of a new 4-plex at the East Entrance. A trailer construction camp was set up due to the commuting time to the East Gate as well as the delays due to road construction. The 4-plex unit was in the framing stages at the end of the fiscal year.

Roofing projects from a 1994 contract as well as from park forces resulted in the continuing of reroofing of the Mission 66 housing units in lower Mammoth, replacing roofs on wash houses with greater pitched roofs, as well as reroofing the South Entrance fire cache, Fawn Pass cabin, and building 12.

Major housing upgrade projects included the total rehabilitation of the Northeast Entrance ranger quarters (251) and one complete unit in the #4 duplex. Work included gutting, rewiring, reinsulating, and replacement of the walls with sheetrock.

Rehabilitation of buildings and offices in Mammoth resulted in the moving of the Paint Shop to the upgraded building 75 and continuing to rehab the old garage into the structural and wildland fire building and office. Remodeling was completed in the Planning and Compliance office and the Administrative Officer's office in the Administration building (36).

Work continued on the interior of the Emergency Services Building at Old Faithful, the new garage in Mammoth, and the Lamar Valley Yellowstone Institute project.

Underground storage tank replacement continued to be a major program primarily concentrating on unregulated heating tanks. Work continued on the clean-up of an old spill at the West Entrance. Tanks were removed at Grant, Bechler, Old Faithful, Madison, South Entrance, Canyon, and Mammoth. The disposal of hazardous wastes was also accomplished under this program.

Utility work orders and projects included a significant amount of work at various water treatment plants, sewage treatment plants, lift stations, generators, and telemetry systems.

The DSC construction contract with Anderson Construction on the replacement of the Canyon sewage treatment plant continued. Major utility projects not funded but existing in very critical states included the worn out Madison sewage treatment plant, the lack of satisfactory water and sewer systems at Norris, and continuing problems at the Old Faithful water and sewer plants. The failure of the sewage mounds at Norris resulted in the closure of the comfort station in the geyser basin parking area. Critical issues in the water and wastewater fields also included improving disinfection of systems prior to opening as well as backflow prevention.

Painting projects, both interior and exterior, were accomplished on various buildings and quarters parkwide. Carpeting, insulating, replacing or refinishing floor coverings, and appliance and furniture replacement also continue to be accomplished. The work is insufficiently funded to be accomplished on a preventative maintenance, cyclic basis. Therefore, the quality of housing is low, and a major shortfall in upgrading, rehabilitating, replacing, and constructing additional housing exists.

Roads

The Norris Hot Mix plant manufactured 915 cubic yards of MC-800 asphalt, 3,587 cubic yards of AC-10 asphalt, 1,000 cubic yards of SC-250 asphalt, and 1,453 cubic yards of glasphalt.

A major clean-up of the Gardiner gravel pit was accomplished by the Special Projects road crews. Debris was hauled to the Livingston landfill.

A striping contract was awarded to Mark-Rite Lines of Billings, Montana. Roads that were striped included Grant Village Ranger Station to Fishing Bridge Junction, Bridge Bay Marina Parking Lots, and North Entrance to Mammoth Upper Terrace (epoxy striping).

A chip seal coat was applied to the Grand Loop Road from the Grant Village Ranger Station to the Fishing Bridge Junction. The road was closed to the public and administrative travel July 13,

14, 18, and 19. The chip retention was very good and no tort claims were filed.

The crusher crew processed the remainder of the used asphalt at Soldier's Pit (2,100 cubic yards).

A holding pond was constructed at the Norris Hot Mix Plant as a temporary storage facility for contaminated soil. The storage area is 73 feet by 134 feet and can hold a maximum of 6,300 cubic yards of contaminated soil. The storage facility is lined with an impermeable Nova-thene liner, surrounded by a berm (height = 5 feet), and covered in the winter with a 12 mil Nova-thene cover. The park received a permit for the storage facility from the Wyoming Department of Environmental Quality.

Ten log cabins were removed from the Lamar Buffalo Ranch and transported to the Gardiner gravel pit. At the request of TW Recreational Services, four cabins were moved to the Mammoth, Norris, Madison, and Bridge Bay Campgrounds and seven firewood vending machines were removed from campgrounds and transported to the Mammoth Boneyard.

Special Projects crews removed used asphalt from the Chittenden Road, installed a french drain at the new garage in Mammoth, removed a water intake from the Roosevelt Lodge, eliminated erosion problems, and installed headwalls at Tuff Cliffs and Craig Pass.

Approximately 8,000 cubic yards of 1/2" aggregate was hauled from the Duck Creek pit, north of West Yellowstone, to the Norris hot mix plant. Private contractors hauled 6,210 cubic yards, and the Park Service truck drivers hauled the remainder.

The laydown crew overlayed sections of the Mammoth to Tower Junction road with 3,429 cubic yards of AC-10. Montana Power contracted the park to overlay the Grant Village Camper Services parking lot with glasphalt (100 cubic yards) and the Grant Village main campground road with AC-10 (1,617 cubic yards). The YCC road in Mammoth and the Mud Volcano parking lot were both overlayed with glasphalt (1,353 cubic yards).

Federal Lands Highways Program

Work began on the first phase (Section B) of the reconstruction of the East Entrance road and continues on the overlay (3R project) on the section from Canyon to Norris and on towards Gibbon Meadows. Both projects were supervised by Federal Highways personnel out of Vancouver, Washington, with resource oversight by the Maintenance Division Landscape Architects.

The \$10 million East Entrance project was contracted to Washington Construction, Missoula, Montana, and was approximately

50 percent complete by the end of 1994. The work was deficient, and the road surface was quite rough at times. The road was closed at night from mid-June to Labor Day and was only open for six hours a day in September. It closed for the year on October 1. Most of the culverts were installed, but no new pavement was in place.

The Canyon to Norris overlay was completed by HK Contractors, Idaho Falls, Idaho, in the late summer of 1994. Very few problems or concerns were associated with this project.

The first segment of reconstruction from Old Faithful to Madison was awarded to Burgraff Construction, Idaho Falls, Idaho, in September 1994. Clearing began in October 1994 with the major construction planned for 1995.

Frontcountry Trails

Major frontcountry trails projects included replacing two major sections of boardwalk in the Old Faithful area (1,500 L.F. total). The boardwalk section in back of Old Faithful Geyser was replaced as well as the section from Grand Geyser to the Firehole lower bridge near Castle Geyser. The loop and intersection near Sawmill Geyser was decked with recycled plastic lumber donated from the Lever Brothers Corporation and supplied by Eaglebrook Products of Chicago, Illinois. Minor boardwalk and trail work was also accomplished at the Federal Highways housing area, the Mammoth terraces, Canyon, and West Thumb areas.

Backcountry Trails

Total accomplishments for 1994 included the following major items:

- 107 miles of tread maintained
- 770 linear feet of turnpike constructed
- 10,780 linear feet of tread reconstructed
- 301 linear feet of bridges constructed
- 1,575 hours of constructing drainage devices
- 1,064 square feet of retaining wall constructed
- 1,942 hours of general trail work (clearing, brushing, and cleaning water bars).
- 2,456 hours of packing livestock

Major projects included work in the following locations:

North District:

Warm Creek Pass area
Mist Creek Pass area
Tower Falls Trail
Sportsman Pass area
Yellowstone River Trail

Fawn Pass Trail
Hellroaring area

Lake District:

Cascade Lake area
Howell/Mountain Creek Trail
Lynx Creek
Storm Point Trail
Cascade Lake area
North Rim Trail
South Rim Trail
Broad Creek/Fern Lake area
Seven Mile Hole Trail

West District:

North Fork Specimen Creek
Fawn Pass Trail
Union Falls Trail
Bechler Canyon Trail
Artist Paint Pots Trail
Fan Creek area
Mystic Falls Trail

Snake River District:

Shoshone Creek area
South Shore Shoshone Lake Trail
Bechler River Trail
Snake River Canyon Trail
South Boundary Trail (Big Game Ridge)
Moose Falls Trail

Landscape Architecture

Design Projects

The Landscape Architecture staff laid out several Mammoth parking areas for striping as recommended by earlier plans completed in participation with the Mammoth Parking Committee. Striping plans were produced for Fishing Bridge and Mud Volcano parking areas.

Staff members assisted in siting of the proposed Old Faithful housing unit (6-plex).

The Landscape Architect on the Yellowstone Institute project at Lamar was involved with the construction coordination, prepared the project clearance form, and assisted in design and siting of the solar panels.

In conjunction with the wolf reintroduction project, wolf holding pens were designed with the Research staff.

Graphics were created to be used on the sides of park vehicles running on biodiesel fuel. Numerous smaller design projects were completed: presentation graphics (charts, graphs, photographs...) and produced drawings from survey data.

Design Standards

Design Standards for the park are being developed by an interdisciplinary committee under the direction of the Supervisory Landscape Architect. Members come from within the park and DSC. The goal is to develop guidelines for design, construction, and maintenance that YNP staff, DSC/Field Directorate, concessionaires, and contractors can utilize. The committee met several times through the year to review completed sections. The document will have value beyond Yellowstone Park and may be for sale to the public. The 300 page document includes developed areas, historic photos, sketches, and text. It should be completed in 1995.

Resource Council

The Supervisory Landscape Architect sat on the council to review parkwide projects, provide design information, establish teams, and allot resources.

Resource Teams

Members of the staff served on various resource teams for; Vegetation Management Plan, Turbid Lake Road Rehabilitation, Research Permitting Process, and the Opal Terrace Project.

Federal Highways Road Projects

Parkwide Road Project Landscape Coordination

The Supervisory Landscape Architect provided parkwide landscape representation on the Road Team with involvement in planning, design, construction, and preparation of overall project coordination including involvement on landscape decisions and direction with RMR, DSC, and FHWA personnel. Member of steering committee for roads partnership and Peer Review Committee to evaluate proposals for our region.

Coordination of Parkwide Federal Highways and Land Program (FHLP) Budget Requests

Four divisions, 18 people, and 3 interagency agreements were involved in budget requests for participation in 16 different segments of road projects (overlay and 3-R). The nearly 2 million dollar budget was coordinated and evaluated by the Supervisory Landscape Architect and sent to the Regional Office and WASO for approval.

East Entrance Reconstruction

The first season of work on Lake Butte Overlook to Sylvan Pass was completed with a member of the L.A.'s staff on-site to minimize resource impact, protect natural and historical landscapes, monitor construction, guide the installation of landscape elements, and coordinate revegetation of the road corridor.

Accomplishments include: construction limits were set and cleared, topsoil was salvaged, silt fences installed, 80-90% of the culverts and underdrains were installed, stone headwalls were removed and half of the new ones were installed. Landscape boulders were placed, 90% of the topsoil was placed back on finished slopes, and native seed was sown. Cub Creek area was reclaimed.

East Entrance Reconstruction - Fossil Find

The Supervisory Landscape Architect headed up an incident command team to determine the significance of the find. Nationwide experts were called in to evaluate the specimens. The evaluation was organized and completed in seven days.

East Entrance Reconstruction - Seeding of Slopes

Native seed was spread on the finished slopes once the topsoil was placed. Seed came from the 12 collection sites that have been established on the project (portions of which had been put into production at the Bridger Plant Materials Center). Before seeding took place, the road segment was divided into 3 varying zones and seed was mixed and applied appropriately in each of the three zones. The area of each slope was determined, and seed was hand broadcast at a rate of 8 to 10 pounds per acre.

East Entrance Reconstruction - On-Site Nursery

At station point 660+00, an on-site nursery was established just outside the construction limits. Approximately 40 trees were salvaged from a variety of conifer tree species.

Madison to Biscuit Basin Reconstruction

Construction on segment 254D phase 1 started in the fall of 1994 and continued for one month. The on-site park L.A. gave a topsoil orientation and assisted in planning and design for construction signing. Surveying for center line and clearing limits took place before trees were cut. Thermal resources were protected and a portion of topsoil was removed for salvage.

Canyon to Norris Road Overlay

Upon completion of the road overlay, the landscape crew worked to obliterate pullouts. Hand plants, seed, mulch, and snags were placed to enable the pullouts to revegetate.

Seed Collection

Starting in late summer and continuing through the fall, seed was collected on the East Entrance road, Tower to Northeast, Madison to Biscuit Basin, and West Thumb areas for future road construction projects. The seed was dried, bagged, and sent to Bridger Plant Materials Center for cleaning and further production as part of the parkwide seed bank process.

Stephen's Creek Nursery

The nursery was moved to a different location (to the far southeastern corner of the corral area) so it could accommodate more plants in the ground and in pots. The new water line was completed. A two-person crew, over a three week period, salvaged plants on the East Entrance road project. 536 plants were collected and placed in pots at the nursery, and 232 larger plants were placed in the ground. This same crew spent two weeks salvaging plants on the Madison to Biscuit Basin road project and took them to the nursery.

Sign Program

The Sign Coordinator reviewed hundreds of sign requests. 359 requests were approved, prioritized (and in many cases redesigned), and directed to the Sign Shop. A total of 1,282 signs left the shop (a 45% increase from 1993). This total includes wood routed, aluminum baked, and ready-made aluminum signs.

Sign posts were purchased for each of the districts.

In consultation with the Sign Committee and division personnel, new sign posts and faces were designed to display road construction information related to the Federal Highways road reconstruction and overlay program.

The parkwide winter sign inventory was initiated and nearly completed.

The 1992 *Sign Standards Manual* continues to be updated, with a computer aided design (CAD) format. This format will facilitate future updates and reduce production time and effort.

Parkwide Planting/Revegetation

Canyon Hamilton's Store

In conjunction with the new sidewalk paving project in front of the Canyon Hamilton's Store, the L.A. staff designed and implemented the planting plan. Numerous conifers of different sizes were transplanted to the site via tree-spade. Many forbs, grasses, and boulders were transplanted by hand.

Fishing Bridge Campground

The rehabilitation of the old Fishing Bridge campground is an on-going, four year project (75% complete as of 9/94). Vegetation from the immediate area was transplanted into the previously asphalt covered areas. The new vegetation consisted of tree-spaded conifers, several hundred hand-spaded native conifers, grasses, forbs, and deciduous ground covers and native seed. To assist in plant protection and moisture retention, mulch, boulders, and snags were distributed throughout the project site.

Mammoth Area

Large aspen clumps, cottonwoods, and limber pines were planted in the Mammoth residential area and campground. The bobcat tree-spade was used to plant the aspens, and the cottonwoods were planted from 40 gal. crates (grown from Front Row cuttings). In all, 67 12' cottonwoods, 39 aspen, and 757 (1 gal.) limber pines were planted. All of the cottonwoods, aspens, and a portion of the limber pines were fenced.

PUBLIC AFFAIRS OFFICE

PERSONNEL

Employees directly associated with the Public Affairs Office (PAO) during 1994 included three full-time employees, one subject-to-furlough employee, three volunteers, and an intern.

Marsha Karle has served in the permanent, full-time position of Public Affairs Officer (GS-12) since January 1993. In late July through early August, Marsha was requested by the NPS All-Risk Management Team to assist with plans for the reorganization of the National Park Service.

Due to the ever-increasing workload and expanded duties of the staff in the PAO, Cheryl Matthews was converted from a GS-09, permanent, full-time, Assistant Public Affairs Officer to a GS-11; Elizabeth Kirkpatrick was converted from a GS-05, permanent, subject-to-furlough, Public Affairs Specialist to a GS-07; and Stacy Churchwell was converted from a GS-05, permanent, full-time, Correspondence Clerk to a GS-06, Administrative Assistant. These conversions took effect in December 1994.

In addition to the regular PAO staff, Rebecca Stegeman volunteered in the office from May through July, and Melissa Mason and Sue Stuermer volunteered from August through September. Alex Sholly also assisted our staff from May through August during her internship for Montana State University in Billings, Montana.

BUDGET

The ONPS base for Public Affairs in FY 94 was \$153,200. Additionally, our office received \$16,766 in film permit application and monitoring fees. This money was used to pay Elizabeth Kirkpatrick's salary in addition to the salaries of other park staff who assisted filmers and photographers with their projects in the park.

GENERAL INFORMATION SERVICES

The PAO serves as a clearing house of information for the park and local communities and responds daily to written, telephone, and walk-in requests for assistance and information.

A wide range of correspondence was processed in the PAO in 1994, numbering more than 2,500 by mail and more than 8,000 by telephone. These numbers increased dramatically from 1993 as the reintroduction of wolves into Yellowstone became a reality.

More than 25 percent of the correspondence processed in the PAO was from foreign countries. Additionally, the Public Affairs Office responded to 12 Freedom of Information requests this past year.

The Public Affairs Office worked closely with the Regional and Washington Public Affairs Offices keeping them informed on a variety of matters. Major news items involving Yellowstone included Undine Falls ski lift removal, visitor use management (winter and summer), road reconstruction, poaching, brucellosis, wolf reintroduction, New World Mine, and housing.

Although wolves were not returned to Yellowstone National Park in 1994, much effort was expended towards planning for this event and handling the overwhelming interest from both the public and the media (local, regional, national, and international). The PAO responded to numerous requests for information and interviews, various calls and letters supporting or opposing wolf reintroduction, and several Freedom of Information Act requests for copies of wolf sighting reports/photos. Our planning efforts also included handling legal situations, arranging pool opportunities, faxing and mailing press releases to update the public/media on the progress of wolf reintroduction, and preparing a media center to handle the influx of media expected to arrive for the event.

NEWS RELEASES

There were 71 press releases, 35 emergency news call-outs, and 3 media advisories issued in 1994.

FILMING PERMITS

Forty-seven actual filming and photography permits were issued in 1994 ranging from nature film documentaries to product commercials. Additionally, the Public Affairs Office assisted over 250 other film companies and freelancers throughout the year that often required extensive work-up and scheduling.

The Public Affairs Office implemented new filming guidelines in 1994 to better manage commercial filming and still photography in respect to the park's resources and to make filming and photography more cost effective for the National Park Service. A \$100 non-refundable administrative processing fee was implemented along with a minimum \$300 daily use fee which covers preparation and monitoring of the permit, administrative costs, telephone calls, processing paperwork, and staff time.

PHOTO/SLIDE REQUESTS

The PAO answered over 120 requests for loans of slides and photographs on Yellowstone subjects including requests from the general public, educational institutions, and the media. More than 775 photographs and slides were mailed out.

The Public Affairs Office continues to do the film processing for other divisions in the park; approximately 227 orders were processed.

A new Yellowstone Operating Procedure for Kodalux film processing was implemented in 1994. This new procedure was developed to better track film sent to the developer and to maintain a record of park images available to the master slide file.

PUBLICATION EDITING REQUESTS

The Public Affairs Office responded to more than 250 written and phone requests for editing publications about Yellowstone. These requests were often time-consuming in that they required extensive research in order to provide accurate information for major national and international publications.

OFFICIAL VISITORS/COUNTRIES

- *Vanchai Tantivitayapitak, General Secretary of the Seub Nakasathien Foundation - March
- *Chris Plante, Asia Foundation - March
- *Christopher Jenkins, Department of Conservation, New Zealand - May
- *Provential Governor from Indonesia - May
- *Kasem Snidvongs, Ministry of Science, Technology & Environment and Chawann Tunhikorn, Royal Wildlife Department, Thailand - May
- *Nepal Delegation - May
- *Christopher Laidlaw - May
- *Russian Geologist - June
- *Polish Geochemists (accompanied by USGS) - June
- *Chinese Delegation (accompanied by staff from Senator Baucus' Office) - June
- *Bernaldo Villafarncio, Belize - July
- *Japan Travel Bureau - July
- *Adolf Lanz, multiprofector slide shows - July
- *Superintendents (2) from Argentinian parks - July
- *Dr. Hans Stoiber, Salzburg University, Austria - July
- *Greek Ambassador to the United States - July
- *Lo Ilwa-Chuan, Provincial Department of Agriculture and Forestry - Taiwan
- *Roger Crofts, Scottish Natural Heritage - August
- *Jim Douau and JP Laronde, Escalante International Corporation - August
- *Gao Young and Liu Zhigang, Bureau of Nature Protection an Wildlife Administration, Gansu Forestry Province, China (accompanied by Don

- Hunter, National Biological Survey) - August
- *Roger Grant, Tourism Manager, Department of Conservation, Australia - August
 - *Canadian Park Officials - September
 - *Thomas Maembe, Director of Fisheries in the Ministry of Tourism, Natural Resources and Environment, Tanzania - September
 - *Kari Pelkonen, Chief of Natural Protection Eastern Finland Park Area & Jorma Koivuranta, Chief of Natural Protection, Western Finland Park Area - September
 - *Patrocinio Escusa, Perla Magsalay, Luis and Patricia Sison, Development Consultants Network, Inc., Philippines - October
 - *Chris Muller, Regional Manager, Pilbara Region, Western Australia - October, November
 - *Norio Homma, Director, Public Forest & Park Planning, Kanagawa
 - *Masanori Hamajima, Director of Kanagawa Prefectural Forest, Japan - October
 - *Rami Peled, Israel - October
 - *Dr. K. Sankar - Professor, Wildlife Institute of India - November

MEDIA CONTACTS:

Following are some of the media we assisted in person. Approximately 2,500 more were assisted by phone in 1994 representing national, international, regional, and local media.

Television/Video/Filming/Etc.

- O Pictures - January
- KHAQ (NBC Affiliate) - January
- Mui+Gray - January
- The Beam Group - February
- The Crusaders - February, March
- ABC DayOne - March, May
- Apollo Pictures - March
- Cinematography - March, August
- Beyond 2000 - April, May
- PBS - April, May, September
- Good Morning America - April, September
- Steve Jackson - April
- Locus Solus Productions - April
- RCR, Inc. - April
- Mirage Film and Video Productions - May-October
- Earth Creatures - May
- International Video Network - May, June
- Rockywood Productions - May
- Size, Inc. - May
- Jonathan Donald Productions (for Discovery Channel) - June
- Digitec Productions - June
- Denver Museum of Natural History - June
- Rhalter Group - June, September
- CBS Sunday Morning - June
- Canadian Press - June
- Imagine Productions - June

KEVM - June
Marty Stouffer Productions - June
ESPN II - June
Canadian Sportfishing Productions - June
Outdoorsman TV - June
Preview Media - June
Jonathan Donald Productions - June
Contiki Holidays - June
Wildlife Unlimited - June
Rascona Studios - June, July
Discovery Channel - June, September
M. Phillips Productions - July
Flying M Films - July, August
King World Productions - July
Hiro Ueno Productions - July
New Learning Project - July
Kathleen Martin Photography - July
Zebra Film Productions - July
KIDK - July
Alliance Video Productions - July
LA Connection - July
KUTV - July, December
Downtown Reel - July
US Geological Survey - July
Plurabelle Productions - July
Independent Order of Foresters - July
KOMO TV - July, August
New World Explorers - August
KXLY - August
New Media - August
M-Video - August
ABC Nightly News - August
KSL-TV - August
WAVE, Inc. - August
KREM-TV - August, December
Yellowstone Publications - August
John Walker - August
K2 TV - September
FLETC - September
Today Show - September
National Geographic Traveler - September
Una Vaca Films - September
Image Television - September
Peregrine Productions - September
ESPN - September
South Carolina Educational TV - September
Steve Michelson Productions - October
VARA Television - October
AK Productions - October
William Brewster - October
Manley & Associates, Inc. - November
MECC - October, November

Ellipse Programme - November
 Danika Productions - November
 WCCO TV - December
 University of Wyoming TV - December
 Franz Camenzind - December
 KUSA - December
 KPVI - December
 KMGH - December
 KCNC - December
 KING - December
 KHQ - December
 KIDK - All Year
 Dutcher Film Productions - All Year
 ABC - All Year
 CBS - All Year
 NBC - All Year
 CNN - All Year
 KULR - All Year
 KTVX - All Year
 KTVQ - All Year
 KBZ-TV - All Year
 News 26 - All Year
 National Geographic - All Year
 Environmental News Network - All Year
 Busch Family Productions - All Year
 Wolfgang Bayer Productions - All Year
 Grunko Films - All Year

Radio

Wichita Educational Radio - April
 KXLO - May
 KSBC - May
 KBLG - May
 Voice of America - May
 WHWH - June
 KHOW - July
 Northwest Journal - July
 KTWO - July
 Pulse of the Planet - August
 KUSM - August
 KCTZ - August, December
 KFGO - October
 KGWN - December
 KSL - All Year
 Montana Public Radio - All Year
 KZ95 - All Year
 KMTN - All Year
 Amy Richard - All Year
 KBOZ - All Year
 KJVI - All Year
 KMUS - All Year
 KMSO - All Year

KADQ - All Year
 KIFI - All Year
 BSU Radio - All Year
 National Public Radio - All Year

Magazines/Newspapers/Catalogs, Etc.

Audubon Magazine - May
 Time - May
 Wyoming Tribune - May
 Los Angeles Times - May, August
 Ranger Rick - May
 Prospective Marketing - June
 Trailer Life Magazine - June
 Brainerd Daily Dispatch - June
 Karen Boltax & Associates - June
 New York Times - June, September, December
 Outside Magazine - June
 Daily Mirror - June
 Deseret News - June
 Yellowstone/Glacier Adventures - June, July
 Robert Culver - July, August
 Idaho State Journal - July
 San Francisco Examiner - July
 Calgary Herald - August
 Salt Lake Tribune - August, November
 Conde Nast Traveler - September
 Multi Media Publishing - September
 Newsweek - September
 Washington Post - September, December
 Gannet News Service - September
 The Step-Star Program - September
 The Oregonian - September
 Falcon Press - September, October
 Chicago Tribune - September
 Philadelphia Inquirer - October
 Wall Street Journal - October
 Mountain Living Magazine - November
 Atlantic Monthly - December
 Reuters News - December
 London Sun Times - December
 London Daily Telegraph - December
 Denver Post - All Year
 Wyoming Associated Press - All Year
 Montana Associated Press - All Year
 Idaho Post Register - All Year
 Bozeman Daily Chronicle - All Year
 Livingston Enterprise - All Year
 Billings Gazette - All Year
 Cody Enterprise - All Year
 Casper Star Tribune - All Year
 Jackson Hole News - All Year
 Jackson Hole Guide - All Year

West Yellowstone News - All Year
 Yellowstone Gateway Post - All Year
 Hungry Horse News - All Year
 High Country News - All Year
 Rocky Mountain News - All Year
 Rocky Mountain Magazine - All Year
 Yellowstone Journal - All Year

Freelancers

Dennis Murphy - May
 Mike McClure - May
 Bruce Fiordalisi - May
 George Nachtrieb - June
 Jak Lundquist - June
 John Heywood - June
 Clint Wilkes - June
 Gary Ferguson - September
 Steve Justad - October
 Ted Wood - October
 Fabio Watson - December
 Bryan Broderick - December
 Jack Wood - All Year
 James Halfpenny - All Year
 Bob Landis - All Year
 Todd Wilkinson - All Year
 Geoff O'Gara - All Year
 Kurt Repenshek - All Year
 George Blau - All Year
 Robert Poole - All Year
 Jeff Henry - All Year
 Vicky Costello - All Year

FOREIGN MEDIA CONTACTS

TV/Video

British Broadcasting Corporation - May, June, July, September
 American Rockies Program, Japan - June
 NTV EIZO Center Corporation, Japan - June
 Gerd Zimmerman Productions (ZDF TV), Germany - June, July, August
 TV3, Barcelona, Spain - July
 T-1 New Media, Germany - July, August
 Donna Sandahl, Norweigian TV - August
 ARD Television - August
 Dutch TV - September
 Pioneer Productions, United Kingdom - September
 TV 4, Sweden - September
 Italian TV - December

Radio

BBC - September
 CBC Radio - September

Magazines/Newspapers/Etc.

Netherlands Press Association - April
 British Royal Legion - June
 Canadian Press - June
 The Globe & Mail - August

Freelancers

Jo Shen, China - May
 Rainer Hackenberg, Germany - July
 Karl Teuschle, Germany - July
 Anthea & David Gerie, United Kingdom - August
 Ralph Paasch, Germany - August
 Geraldine & Colin Trembath, United Kingdom - September
 Mateus Mangold, Germany - September

CONGRESSIONAL/OFFICIAL AND OTHER VISITORS

Throughout the year, the Public Affairs Office assisted with programming and arrangements for United States government dignitaries, park officials, and other guests. A sampling of these visitors follows:

Brooks Yaeger, Policy Analyst for the Assistant Secretary - May
 Bruce Babbitt, U.S. Secretary of Interior - May
 Sherri Lewis and Lambchop - May
 Mr. and Mrs. Scott Bowler, Secretary of Tourism Office - September
 Lonnie Barrett, Park Director for Georgia - September

MEETINGS

Tri-state Brucellosis Meeting - January
 Cody Task Force Meeting - April, May, November
 Montana Governor's Conference on Tourism - April
 Wyoming Governor's Conference on Tourism - April
 Montana Travel and Recreation Initiative Meeting - April
 IGBC Meeting - April
 Greater Yellowstone Coalition annual meeting - May
 Employee Potluck (Babbitt's visit) - May
 Visitor Use Management Meeting - June, October
 Public Affairs Conference - June
 YPMS fall Meeting - September

SPECIAL EVENTS

Cody Days! - May
 National Parks Week/Opening Ceremony for the IMAGINE! YELLOWSTONE exhibit at the Canyon Visitor Center - May
 Christmas Tree Lighting Ceremony and Community Open House - December

RESOURCE MANAGEMENT OPERATIONS AND VISITOR PROTECTION

Chief Ranger: Dan R. Sholly

Assistant Chief Ranger: Michael B. Murray

BUDGET (FY94)

ONPS	\$3,555,000
Fee Collection	500,100
Fishing Fees	<u>218,300</u>
TOTAL	\$4,273,400

PERSONNEL

FTEs (FY94)	138
# Permanent employees	83
# Seasonal employees	158
# YCC enrollees	<u>30</u>
TOTAL # employees	271

Deaths

1. Robert E. Mahn, East Entrance Sub-District Ranger, died on-duty as a result of a snowmobile accident on January 17, 1995.
2. Ryan F. Weltman, seasonal backcountry ranger at Shoshone Lake, died on-duty as a result of a sea kayaking accident on July 4, 1995.

Retirements

1. None

Transfers out of RMO&VP

1. Larry Johnson, from Grant Village Sub-District Ranger to District Ranger, Voyageurs National Park.
2. Laurette Lee, from Resources Management Coordinator, Snake River District, to Resources Management Specialist, Colorado National Monument.
3. Cheryl Dillard, from Visitor Services Clerk, to LBJ Historical Park.

Transfers to RMO&VP

1. Maria Grace Gifford, from Mail & Files Clerk in Administration to Clerk in the Chief Ranger's Office.
2. Tim Reid, from Badlands National Park to Assistant Sub-District Ranger, Old Faithful.
3. Gary Youngblood, from Olympic National Park to Park Ranger, Lake Sub-District.

In-Park Reassignments

1. Bundy Phillips, from Assistant Sub-District Ranger at Old Faithful to Lamar Sub-District Ranger.
2. Morris Bray, from Park Ranger in Mammoth Sub-District to Park Ranger in Old Faithful Sub-District.
3. Cat Syrbe, from Park Ranger in Old Faithful Sub-District to Park Ranger in Mammoth Sub-District.
4. Paul Miller, from North District Criminal Investigator to Assistant Resources Management Coordinator, North District.

New Hires

1. Robert L. Blackwell, Horse Handler Leader.
2. Stacey Love, South District Clerk.
3. Tara Ross, South District Clerk.
4. Carrie Taylor, Communications Technician.
5. Doug Bundren, Forestry Technician.

Park Visitation

A service-wide change in the statistical program used to calculate park visitation was implemented in January 1993. For Yellowstone, this resulted in different person per vehicle ratios (PPVs) being used, and travel statistics for U.S. Highway 191 were included in the total count for the first time. This resulted in an apparent increase in total recreational and non-recreational visitation.

<u>Visitor Entry by Entrance Station</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
West	1,067,068	966,348	994,403
South	864,928	801,432	863,442
North	546,549	534,888	593,059
East	543,770	476,189	413,537
Northeast	164,275	162,970	201,830
SUB-TOTAL	3,186,590	2,941,830	3,066,276
U.S. Highway 191	(not included)	892,765	959,666
TOTAL	3,186,590	3,834,595	4,025,942

Fee Collection (FY94)

Two significant changes occurred in the park fee collection program in 1994. Responsibility for managing four major campgrounds (Bridge Bay, Canyon, Grant Village, and Madison) was transferred from the Park Service to TW Recreational Services, a park concessioner. As a result, fees collected by TWRS at these campgrounds are no longer considered as NPS receipts. The park initiated a Special Use Permit (SUP) program for fishing which resulted in the collection of \$392,267 in SUP fishing fees in FY94 (with a total of \$437,000 collected in CY 94).

<u>Entrance Stations</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
West	\$1,335,753	\$1,401,106	\$1,602,381
South	71,573	85,627	226,022
North	550,446	554,000	593,059
East	890,603	909,874	413,537
Northeast	223,420	210,069	201,830
SUB-TOTAL ENTRANCE STATIONS	\$3,071,795	\$3,160,676	\$3,798,412
Campground fees collected	\$1,058,499	\$1,085,825	\$370,583
Boating SUP fees collected	23,790	30,490	34,625
Fishing SUP fees collected	n/a	n/a	392,267
TOTAL FEES COLLECTED	\$4,154,084	\$4,276,991	\$4,354,997

VISITOR SERVICES OFFICE (VSO)

<u>Permits Issued</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Golden Eagle Passports	8,402	9,907	12,622
Golden Age Passports	10,500	unknown	13,074
Golden Access Passports	991	675	750
Annual Park Passes	13,244	13,155	17,183
Boat Permits: motorized	1,552	1,361	1,543
non-motorized	1,640	1,872	2,076
Fishing Permits*	159,204	161,058	77,091
Other Special Use Permits	110	129	147
Park Supplier Permits	218	223	760
Employee Vehicle Permits	4,000	3,870	3,900
Fee Waivers	246	221	297
Commercial Use Licenses	109	155	153

* There was no charge for fishing permits prior to 1994.

<u>Lost and Found</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Found items	4,073	3,186	3,023
Lost items reported	1,800	1,800	1,900
Items returned to owner	893	686	730
Items returned to finder	1,500	530	340

<u>Visitor Information</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Information calls	12,000	17,453	21,360
Information responses mailed out	5,600	6,500	5,258

The Visitor Services Office staff inventoried and distributed 35 different park publications such as maps, newspapers, bison and bear warnings, backcountry brochures, boating permits, etc. to 11 campgrounds, 5 entrance stations, and 7 visitor centers. Over 30 tons of brochures, maps, and newspapers were delivered by the office staff through the course of the summer. The office

supervisor, with the help of the Communications Center and Interpretive staff, coordinated and produced park informational mail-out packages.

Communications Center	<u>1992</u>	<u>1993</u>	<u>1994</u>
Identification Notices	325	187	249
Number located	61	33	39
Percent located	18.8%	17.6%	16.7%
Criminal History Checks*	1,502	1,873	2,012
* No. Individuals Run	393	479	513
Other Law Enforcement Checks	48,476	49,617	61,916
Vehicle Checks	10,229	9,811	12,401
Persons	7,397	6,758	8,851
Locals	11,110	12,808	15,531
NCIC Entries	14	7	4
NCIC Inquiries	19,749	20,240	25,131
APB's	28	39	38
ATL's	27	19	14
Wrecker Requests	228	184	212
Incoming Calls	342,437	201,472	189,431
Call taken by *CINDI	182,674	122,414	125,020
Percent of call taken by CINDI	53.3%	60.7%	66%
Information Packets Mailed	29,158	30,434	28,053
Foreign	2,034	1,871	1,634
Regular	27,124	28,563	26,419

Visitor Protection

<u>Employee certifications</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Permanent commissioned rangers	44	50	54
Seasonal commissioned rangers	54	54	66
Deputy USF&W Agents	31	29	29
County Deputy Sheriff	24	34	24
Deputy U.S. Marshal	1	1	1
SCUBA certified	4	2	4
Firearms Rangemaster	27	27	28
 <u>Law Enforcement</u>	 <u>1992</u>	 <u>1993</u>	 <u>1994</u>
Case Incidents Reports	4,853	4,238	5,375
Motor Vehicle Accidents	510	505	603
Part I Offenses	164	152	155
Part II Offenses	3,021	3,979	7,503
Car Clouts	65	52	65
Violation Notices Issued	2,623	2,836	3,279
Arrests	110	92	150
Court Cases (heard in Yellowstone)	230	182	274

<u>Resource Violations</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Preservation of Natural Resources	38	79	75
Snowmachine Violations	165	126	225
Camping	195	182	182
Closed Area Violations	252	212	286
Firearm Violations	25	29	25
Fishing Violations	55	17	76
Swimming/Bathing Violations	115	41	117
Wildlife Hunting	13	5	15
Verbal Warnings for Firearms Violations -		660	664

<u>Emergency Medical Services</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Basic Life Support cases	391	551	572
Advanced Life Support cases	103	115	145
TOTAL # Cases	494	666	717
NPS Ambulance Transports	236	280	288
NPS Air Ambulance Transports	38	50	43

West Park Hospital of Cody, Wyoming, the park medical services concessioner, provides oversight to the park EMS program. In 1994, the park had a total of 122 personnel certified as EMS providers. This number included 29 First Responders, 83 EMT-1s, 10 Park Medics. A total of 550 staff-days of EMS training was conducted.

<u>Search and Rescue</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
# SAR incidents	31	41	21
# work hours on SAR incidents	2,680	3,409	1,775
personnel costs	\$4,475	\$42,300	\$34,080
# flight hours on SAR incidents	26.0	25.9	12.5
flight costs	\$19,500	\$21,548	\$11,900
Total SAR expenditures	\$23,975	\$63,848	\$45,980

The park established a technical rescue team training program to improve preparedness parkwide for technical rescue incidents. A 40-hour Managing the Search Function course was conducted in January with 30 participants.

<u>Structural Fire</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Alarms	157	193	292
Fires	17	13	34
TOTAL	174	206	326

A variety of special training sessions were held including the following: 1 Firefighter I/II; 1 40-hour Surviving Hazardous Materials Spills; and 3 8-hour vehicle extrication. In addition, there were classes on SCBAs, blood borne pathogens, confined space entry, and basic firefighter refresher.

Wildland Fire Operations

1994 was the most active fire season since 1988. The winter of 1993-1994 was extremely dry, with the southern part of the park running approximately ten inches of precipitation below normal. The dry winter was followed by a warm, dry summer and fires burning into October.

In 1994, there were a total of 64 fire starts burning a total of 16,238 acres. Most of these acres were burned in three fires, the Tern and Raven which were placed in Confine/Containment strategies and the Robinson fire. Yellowstone used two Type II Incident Management Teams on the Robinson fire. The total suppression cost of the fires in Yellowstone was \$3,029,343.

There were only four Prescribed Natural Fires, two of which were natural outs and two which were converted to wildfires and suppressed due the high fire danger and the national drawdown of suppression resources around the country.

Yellowstone was an active participant in the wildland fire operations all over the United States in 1994. 139 Yellowstone firefighters were dispatched to 59 incidents outside of the park including supporting the Howling PNF in Glacier National Park. Three firefighters were also detailed to New Mexico for three weeks to work with an Engine Strike Team. Yellowstone also had three employees assigned to Incident Management Teams in the Northern Rockies.

Over 100 employees attended Wildland fire training courses offered by the park fire management staff in 1994. These courses included: S-130/S-190, Basic Firefighter; S-217, Interagency Helicopter Training; RX-91, Fire Monitor Training; and S-230, Crew Boss.

Air Operations

1994 was the first year of a three-year contract agreement with Geo-Seis Helicopters of Ft. Collins, Colorado. The aircraft provided was an Aerospatiale 315B "LAMA". The flight rate was \$972 per hour with a 200 hour guarantee for the 108 day contract period, June 15 through September 30, 1994. The contract had 3 days of unavailability, two of those days at the start of the contract getting the helicopter ready for fire operations.

The contract helicopter flew 447.3 hours in 1994, an increase of 243 (219%) hours over 1993. An additional 32.3 hours were flown by rental helicopters for other park operations. No personnel accidents or injuries were incurred during 1994 aviation operations. Search and Rescue (SAR) operations comprised 9% of the total flight hours flown, the same as in the previous three years.

Short-haul operations resumed in 1994 with the entire helitack crew completing the required training. Four short-haul missions were flown.

There were 43 air-medical flights flown, down from 50 in 1993. Eastern Idaho Regional Medical Center flew 32 transports, Billings flew 6 transports, and Bannock Regional Medical Center flew 5 transports.

<u>Backcountry Management</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
# Backcountry Permits Issued	6,575	6,586	7,005
# Visitor Use Nights	42,124	45,135	45,267
# Stock Use Nights	7,229	8,584	7,774

The computerized backcountry campsite reservation system, which was initiated in the Backcountry Office in 1993, worked well with few significant glitches. A remote computer station was installed at the backcountry desk in the Mammoth Visitor Center. Plans are to add six more remote stations in 1995.

The *Draft Backcountry Management Plan and Environmental Assessment* was released for public comment. Final approval of the plan was delayed pending the arrival of new Yellowstone Superintendent Michael Finley.

<u>Limited Concessions Permits</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
# Limited Concessions Permits	62	59	58
# commercial stock trips reported	708	657	569
# LCPs transferred/terminated	0/0	0/3	0/1

In 1994, there were 58 saddle and pack stock outfitters who operated in Yellowstone under Limited Concessions Permits. Three of these were llama packers. Over 200 outfitters and guides attended the annual two-day meeting in June. In addition, winter meetings were held in Cody and Jackson, Wyoming, and Bozeman, Montana.

Resources Management Operations

The RMO&VP Division is responsible for developing and implementing the Resource Operations Program required to fulfill the broad direction outlined in Yellowstone's Resource Management Plan. District Rangers, Sub-District Rangers, and the District Resource Management coordinators, in cooperation with the Division's Resource Management Operations Coordinator, jointly plan and accomplish the program.

Two significant changes occurred in the Resource Operations staff in 1994. Snake River District Resource Coordinator Laurie Lee transferred to Colorado National Monument and was replaced by

Dave Price. In addition, Paul Miller was added to the staff as the Assistant Resource Management Coordinator in the North District. Resource Operations Program highlights include:

Exotic Vegetation Management

RM0&VP staff is responsible for preventing, monitoring, and controlling exotic plant infestations. Increasing infestations, recent amendments to federal laws, and an increase in ground disturbance due to highway reconstruction have focussed more effort and attention on the exotic plant program. In 1994, the park established a resource team to update the 1986 Exotic Vegetation Plan and write an Environmental Assessment for the new plan. The new plan should be completed in the winter of 1995/1996. Weed managers created the WEEDBASE database program to better monitor and evaluate weed infestations and developed the first parkwide weed map using WEEDBASE data and ARCInfo GIS software. Managers were actively involved in several ecosystem weed initiatives including the Upper Madison, Henry's Fork, and Upper Snake River Weed Management areas. Staff continued an aggressive weed control program, treating 361 acres of knapweed, 28 acres of toadflax, 57 acres of wooly mullein, 134 acres of houndstongue, 67 acres of yellow sweetclover, 10 acres of musk thistle, 42 acres of whitetop, 7 acres of ox-eye daisy, 217 acres of Canada thistle, and 28 acres of other weeds.

Cultural Resources Management

The Ninth Annual Resource Management Workshop, held February 7-9, featured "Yellowstone's Cultural Resources." Speakers included Aubrey Haines, Yellowstone's former Park Historian, Dave Ruppert, RMRO Ethnographer, Ann Johnson, Archeologist with the RMRO, and John Cook, RMRO Director.

The RMO&VP Division sponsored a training workshop on the National Environmental Policy Act and the National Historic Preservation Act. The workshop was conducted by Chris Turk and Mike Schene from the RMRO and was held February 27-March 1 in Mammoth.

Fisheries Management

RM0&VP staff, with the income generated by the fishing fee program, emphasized fishing education and regulation enforcement. A parkwide training program was initiated to teach permit issuers to interpret regulations and present the information to anglers. Compared to 1993, parkwide verbal warnings increased 92%, field interrogations increased 520%, violation notices increased 230%, and angler checks increased 290%. Thirty-six fisheries exit gate surveys were completed at the entrance gates to calibrate and complement the Volunteer Angler Report system.

RMO&VP staff cooperated with other park staff to identify and monitor lake trout presence in Yellowstone Lake. Coordinated informational contact with visitors and TWRS fishing guides who caught lake trout in the lake, produced a field form to report lake trout catches, coordinated surveys of anglers at Bridge Bay Marina for further lake trout information, contacted fishing guides and stores for lake trout posters and information signs, assisted with fall gill netting for lake trout, and served as a member of the resource team established to lead lake trout efforts.

Inventory and Monitoring

Staff monitored amphibians in cooperation with Dr. Charles Peterson, Idaho State University, at the South Entrance Pond and Harlequin Lake. Dr. Peterson monitored on a monthly basis; park staff filled in on a weekly basis. Data will be analyzed by Dr. Peterson.

Whitebark pine transects at Avalanche Peak, Pitchstone Plateau, Big Game Ridge, and Two Ocean Plateau were monitored in cooperation with the Bear Management Office and the Interagency Grizzly Bear Study Team. Data were forwarded to the IGBST for analysis.

Monitored air quality at the National Atmospheric Deposition Program station (NADP) at the Tower Ranger Station including collecting and performing conductivity, Ph, and volume measurements on 52 weekly precipitation samples. Also participated in four inter-site comparison studies, processed one "blind audit sample," and underwent inspection and testing by a USGS contractor. Maintained the Air Quality station at the Lake Rangers Station including maintaining the Particulate Monitoring Network (IMPROVE) sampler system, Ozone Effects sampling, and gaseous pollutant and visibility monitoring program.

Collect water samples for the chloride flux monitoring program on the Gardiner, Yellowstone, Snake, and Madison Rivers in cooperation with the U.S. Geological Survey.

In cooperation with USFS, Northern Region, monitored gypsy moth presence parkwide. RMO staff placed and retrieved 76 pheromone traps throughout the park. Caught one male moth in Mammoth Campground which will necessitate delimitation trapping in 1995.

Geothermal Management and Physical Resources

RMO staff and volunteers monitored 81 thermal pools and geysers in the Upper, Middle, and Lower Geyser Basins for vandalism. Coins (2945), cigarette butts (approx. 8000, our worst problem), and sticks, rocks, and nails thrown into the thermal features were removed by hand. In addition to the hand clean-out efforts,

Corral Pool, Spiteful Geyser, and Morning Glory Pool were vacuumed out with the assistance of the Maintenance Division and the honey wagon. RMO and maintenance staff installed an experimental concrete curb adjacent to Pebble Geyser to prevent deteriorating asphalt and road fill material from migrating into the geyser and plugging circulating vents. RMO staff also monitored water flow in Reese Creek in response to irrigation rights.

Site Restoration

A resource team was established to plan and execute restoration of the Boundary Line Area (BLA) in anticipation of NRPP funding scheduled to begin in FY 94. The goal of the project is to restore natural ecological processes in the BLA in terms of drainages, vegetation, and landforms (in keeping with the cultural and area integrity). Jim Sweaney, the North District RMC, was appointed as the interim project leader. The committee drafted a task directive and a scope of work; contracted with Archivist Lee Whittlesey to produce a historical report on the area; contracted with WASO Geologist David Steensen to plan restoration of the irrigation ditches, railroad bed, and Landslide and Stephens Creeks; and purchased physical equipment to complete restoration. The technical subcommittee continued researching vegetative restoration methods including installing a three-acre test plot. The next big initiative will be contracting an archeological assessment and completing cultural compliance.

RMO&VP staff completed restoration of the Pelican Creek Campground including removing asphalt from abandoned loops, planting trees, seeding, and mulching. Significant progress was made toward restoring the abandoned Fishing Bridge Campground. Cultural compliance approval was finalized and three more loops were restored to natural conditions. In addition, several social trails were restored. Lake Maintenance, Special Projects crews, Landscape Architects, and Lake RMO staff worked cooperatively.

Wildlife Management

Coordinated spring carcass surveys on the Firehole River, Norris area, and Heart Lake with the Bear Management Office. Monitored Yellowstone Lake tributaries for cutthroat trout spawning and associated bear activity at Lake, Bridge Bay Campground, and Grant Village Campground. Performed interpretive talks on bear habitat use and management for park visitors, classrooms, and professional meetings. Oriented park employees to the park's bear management program and to living in grizzly bear habitat. Managed habituated coyotes, elk, bison, grizzly bears, and black bears parkwide. Conducted integrated pest management programs for bats at the Lake Ranger Station, Lake Lodge, Lake Hamilton's Store, and the Grant Village Camper Services Building.

Bison Management Operations

Bison management operations along the park's boundary with Montana continued to function under the terms of the Interim Bison Management Operating Plan. As a result of management actions by the state of Montana, a total of 49 bison were removed from lands neighboring the park in 1994. In the West Yellowstone area, 5 bison were removed during the spring, and 32 more were removed during the period of September-December. Twelve bison were removed from the Gardiner area in December. During the fall, West District personnel (for the West Yellowstone area) and North District personnel (for the Gardiner area) monitored bison activity within or near the park boundaries, initiated and conducted strategic hazing activities to move bison back into the park, and assisted the Montana Department of Fish, Wildlife, and Parks and Department of Livestock with bison shooting operations upon request. NPS personnel involvement and costs for bison management operations is indicated below.

<u>West District</u>	<u>1994</u>
Monitoring	210 hrs.
Hazing (# incidents)	18 hrs. (5)
Shooting Ops. (# incidents)	55 hrs. (3)
TOTAL Staff Time	283 hrs.
Estimated Cost	\$4,245.00

<u>North District</u>	
Monitoring	93 hrs.
Hazing (# incidents)	206 hrs. (10)
Shooting Ops. (# incidents)	78 hrs. (3)
TOTAL Staff Time	377 hrs.
Estimated Cost	\$5,655.00

YELLOWSTONE CENTER FOR RESOURCES

The Center is under the direction of Director John D. Varley with Wayne G. Brewster serving as Deputy Director. There are five branches within the Center with the Deputy Director supervising the Branch of Center Support and Special Projects, Stuart Coleman as Chief of Natural Resources, John Sacklin as Chief of Planning and Compliance, Laura Joss as Chief of Cultural Resources, and Henry Shovic as Chief of Advanced Resource Technology.

The Center had a total budget of \$2,270,244 and a total of 38.11 FTEs; the allocation of those resources are as follows:

FUNDING BY BRANCH AND TYPE

	ONPS	CRPP	Wolf Funding	NRPP	Federal Highway s	Other
Center Support	415,500		360,000			30,000
Natural Resources	488,000			96,000	34,000	227,030
Cultural Resources	90,000	33,200			9,300	
Planning& Complianc e	208,000					61,214
BART	52,000			144,000		2,000
TOTAL Division	\$1,253,500	\$33,200	\$360,00 0	\$260,00 0	\$43,300	\$320,24 4

PERSONNEL ROSTER FOR FY 94

NAME BY BRANCH	TITLE	FTE	BORROWED FTE
HEADQUARTERS BRANCH			
Jessica Bukovekas	Biological Science Tech	.08	
Norm Bishop	Resources Interpreter	1.0	
Wayne Brewster	Deputy Director	1.0	
Sarah Broadbent	Technical Writer Editor	.93	
Gil Deans	Animal Packer	.11	
Renee Evanoff	Visual Information Specialist	1.0	
Mary Harter	Wildlife Biologist	.20	
Craig Hertoghe	Biological Science Tech	.21	
Mark Johnson	Wildlife Veterinarian	.94	
David LaConte	Administrative Clerk	1.0	
Bob Lindstrom	Management Assistant	1.0	
John Litherland	Biological Science Tech		.18

John Mack	Outdoor Recreation Planner	1.0	
Melissa McAdam	Budget Analyst	1.0	
Margaret Olliff	Editorial Aide	.54	
Joy Perius	Secretary	.97	
Paul Schullery	Senior Editor	1.0	
Tana Sholly	Center Clerk		.03
John Varley	Director	1.0	

NATURAL RESOURCES

Mark Biel	Biological Science Tech	.84	
Stu Coleman	Chief, Branch of Nat. Resources	1.0	
Sue Consolo-Murphy	Resource Management Specialist	1.0	
Rebecca Danforth	Biological Science Tech	.01	
Kerry Gunther	Wildlife Biologist	1.0	
Mary Hektner	Resource Management Specialist	.99	
Roderick Hutchinson	Research Geologist	1.0	
Lauryl Mack	Secretary	1.0	
Terry McEneaney	Wildlife Biologist	1.0	
James McGrath	Biological Science Tech	.30	
Roy Renkin	Vegetation Mangmt Specialist	1.0	
Steve Rice	Biological Science Tech	.34	
Robb Tatum	Biological Science Tech	.09	
Tim Thompson	Biological Science Tech	.26	
Robert Chambers	Physical Science Tech	.95	

CULTURAL RESOURCES

Elizabeth Barnosky	Geologist (Paleontology)	.15	
Elsa Kortge	Office Automation Clerk	.86	
Susan Kraft	Supervisory Museum Curator	.23	
Catherine Lentz	Cultural Res. Mangmt Spec.	1.0	
Cydney Martin	Supervisory Museum Curator	.03	
Patricia Riley	Park Ranger (Museum)	.29	
Jennifer Whipple	Botanist (Museum Curation)	.76	
Lee Whittlesey	Museum Tech		.23

BART

Natasha Bleir	Soils Conservation Tech	.03	
Amy Emmanuelson	Soils Conservation Tech	.19	
Jill Harting	Soils Conservation Tech	.76	
Alexa Henry	Soils Conservation Tech	.15	
Ann Rodman	Soils Scientist	1.0	
Henry Shovic	Chief, Br. of Adv. Res. Tech.		.80
David Thoma	Soils Scientist	1.0	

PLANNING & COMPLIANCE

Kris Churchill	Secretary	1.0	
Karl Cordova	Outdoor Recreation Planner	.94	
Elizabeth Kaeding	Outdoor Recreation Planner	.95	
Gary Matthews	Management Analyst	.00	
Dave Price	Outdoor Recreation Planner	1.0	
John Sacklin	Chief, Br. of Planning & Comp.	1.0	
William Schneider	Outdoor Recreation Planner	1.0	

USF&WS

Melissa Schultz	Biological Technician	.01	
Ken Fone	Biological Technician	.38	
Michael Jones	Biological Technician	.38	

TOTAL FTE		36.87	1.24
-----------	--	-------	------

Branch of Center Support and Special Projects

The evolution of the Center for Resources continued after its establishment in 1993 and has been blessed with some successes and has been plagued with some misfortune. People are the principle resource by which we accomplish our mission, and we are pleased to have some very good people join the organization.

Joining the Center were Mike Phillips, Doug Smith, and Laura Joss. Mike is the Project Leader for the wolf reintroduction project and came to us from the U.S. Fish and Wildlife Service where he was in charge of the reintroduction of red wolves in North Carolina. Doug joined us as the project biologist near the end of the year and came to us from the University of Nevada at Reno where he is completing his PhD. Doug has extensive experience with wolves, particularly working with Dr. Rolf Peterson on Isle Royale. Laura will be discussed in the Cultural Resources Section.

The Final EIS for wolf reintroduction into Yellowstone National Park and central Idaho was completed with the Record of Decision signed by Secretary Babbitt in June 1994. Special regulations for management of the experimental population was completed by the U.S. Fish and Wildlife Service and became effective in November. Yellowstone organized for planning and implementing the reintroduction under an Incident Command System with Wayne Brewster as Incident Commander and Mona Divine as Operations Officer. There was representation from all Divisions and areas of the park and a tremendous amount of effort was put forth by all. By the end of November, preparations had been completed with acclimation pens constructed, the security and transport planning complete, and arrangement for the media center ready. After a hearing in Cheyenne on the Farm Bureau Federation's litigation which ended on Christmas Eve, the park and FWS began capturing wolves in Canada and after several legal maneuvers, we were given the green light to begin the historic return of live wolves to Yellowstone National Park. That event occurred in January with much fanfare and will be reported in detail in next years report. We thank all the people in the park, the Region, WASO, and our colleagues in other agencies and the private sector who put in such a magnificent effort.

Thermophilic microorganisms became big news during the year, mostly because of their commercial applications. Yellowstone is a treasure-trove in this specialized area of biodiversity. Government, the corporate world, universities, and media have a substantial interest because of property rights issues, both chattel and intellectual rights. The park began a series of efforts to clarify the issues beginning with the research permitting system and will eventually develop draft policy papers for servicewide consideration. We have been assisted by the DOI Solicitor's Office in these efforts.

Yellowstone Park has embarked on an ambitious 20-year road reconstruction program, and the Center has been making significant progress in funding and resource input into those projects. By expending this type of effort, it is estimated that there will be many fewer natural and cultural resource conflicts associated with the resultant new roads.

Science continues to be stressed with Yellowstone hosting 222 research projects in Yellowstone including 71 projects in Physical Science, 32 in Forestry/Range/Plant ecology, 60 in Wildlife topics including wolves and bears, 34 in Microbiology, 20 in Archeological/Social areas, and 21 in Fire related subjects. NPS funding for this research was \$986,255. Additional funds came from other sources including: other federal agencies, \$3,716,051; state agencies, \$435,059; academic institutions, \$418,208; non-profit organizations, \$234,265; and personal/other, \$133,195; for a total research expenditure in Yellowstone of \$5,932,033.

The discovery of lake trout in Yellowstone Lake, the result of an apparent illegal introduction, was tragic news. Visiting fishers reported catching two lake trout in September which were confirmed by FWS and park biologists. Experimental gill netting this fall and winter provided evidence that lake trout were in the Lake and apparently had been there for a number of years. Actions were taken to assess the situation, and a panel of experts were asked to participate in a workshop to develop recommendations on how to minimize the effects on the aquatic and terrestrial components of this ecosystem which interact so intimately. It appears likely that we will be in a perpetual mode of lake trout removal until perhaps new technology is developed through which some form of biological control can be developed to limit or eradicate the lake trout.

History has shown that most of the big sociopolitical issues in Yellowstone have been resource related and thus consume a large portion of the human resource. As in most areas of the federal government, the overall funding picture for the Center is both austere and declining. Yellowstone spends about one-half the amount on resources as it did in the late 1980s and early 1990s. "Reprioritizing" tasks and programs and "doing with less" have become bywords to live by in the current environment. Our challenge is to devise some kind of "minimum tool" concept so that the most crucial functions can continue.

Branch of Cultural Resources

Effective in July, the research library and archives functions previously supervised by the Division of Interpretation were transferred to the Branch of Cultural Resources. Lee Whittlesey continues to manage these resources, which include the National Park Service's only National Archives and Records Administration

satellite repository. In October, the vacant post of Chief, Branch of Cultural Resources was filled by Laura Joss. Joss replaces Paul Schullery, who had served as Acting Chief of Cultural Resources since March 1993, when the branch was created. Joss was formerly Regional Curator with the NPS Rocky Mountain Regional Office.

On April 28, the "President's Award for Design Excellence" was presented to the National Park Service for the Old Faithful Inn Rehabilitation. As quoted in the award, this project was "...a decade-long painstaking effort which revitalized and restored America's premiere log structure in Yellowstone Park." This award, the highest honor for any federal project, is given every four years. The rehabilitation project had previously won the "Federal Design Achievement Award" which is the highest honor from the National Endowment for the Arts. It also won the "National Historic Preservation Award," the top award from the President's Advisory Council for Historic Preservation, given once in 25 years.

Obsidian Cliff has long been recognized as an important source of obsidian for prehistoric trade and tools. In 1994, the site was nominated for National Historic Landmark status based upon a report produced by Ann Johnson, Staff Archeologist at the Rocky Mountain Regional Office.

Other archeological projects in the park included the ongoing inventory and mitigation of sites along road corridors in anticipation of eventual FHWA resurfacing or reconstruction. Road segments addressed included: East Entrance Road; Madison Junction to Biscuit Basin; Norris to Madison Junction; and Northeast Entrance Road. Other archeological work in 1994 included inventories for: the housing replacement project; replacement of a Montana Power Company line; potential wolf pen sites; Bridge Bay Campground sites; and the Norris sewage disposal site.

Yellowstone was delegated Section 106 compliance responsibility in 1992, and during 1994, Catherine Lentz, the park's Cultural Resource Specialist, continued to ensure compliance with the National Historic Preservation Act and implementing legislation. To accomplish this, some 145 projects and 23 reports were reviewed in 1994. Projects included: Hamilton's Lake General Store (handicap accessibility and new restroom), Roosevelt Lodge Historic Structures Report, Old Faithful Snowlodge, Old Faithful Clinic, Lake Hospital Duplex, cultural landscapes, Bison Management Plan, Boundary Lands Adjustment, Roosevelt septic system, Canyon cistern and Lower Slough Creek cabin. The Programmatic Agreement for the FHWA roads project was also reviewed and revised in 1994.

Archival and research library program accomplishments in 1994 included the production of Part One of the "Administrative History of Interpretation in Yellowstone," A Pre-1905 History of Large Mammals in Pierre's Hole, Idaho; Jackson Hole, Wyoming; and the Bechler Region of Southwestern Yellowstone, "A Brief History of Gardiner's Ice Lake Reservoir," "The First National Park Interpreter: G.L. Henderson in Yellowstone, 1882-1902." An inventory and photographs of the extensive private Yellowstone collection of Jack and Susan Davis was produced. During 1994, the archives and research library staff provided assistance during 160 individual visits from researchers and responded to 75 written requests for information. Numerous presentations and tours of the park were given by Museum Technician (Acting Archivist/ Historian) Lee Whittlesey during 1994.

Supervisory Museum Curator Susan Kraft graduated from the Servicewide Intake Trainee Program in June 1994. In addition to the extensive training she attended as part of the program in 1994, she began a program of updating the park's museum records, upgrading museum storage and security, and providing training to park staff and visitors. Technical assistance was also provided to the Incident Command Team which dealt with the discovery of Eocene leaf fossils during a road construction project.

PLANNING AND COMPLIANCE

The Planning and Compliance staff worked on a wide variety of projects in 1994 that are within the office's role and function: to provide assistance to all park offices and divisions in the areas of development and resources management planning, NEPA compliance, permit application, accessibility, project clearance, and project tracking.

The *Draft Environmental Impact Statement, Fishing Bridge Campsite Replacement* was completed and distributed for public review in November 1994. As part of the 1988 *Fishing Bridge DCP*, the National Park Service committed to replacing the 310 campsites removed from Fishing Bridge if occupancy at the other park campgrounds showed a need. Campground occupancy at the remaining campgrounds exceeded 95 percent in 1989, 1990, and 1991, and the park initiated plans to replace the Fishing Bridge campsites. In the early stages of this effort, the planning team recognized that new information about grizzly bear use of Yellowstone Lake spawning streams and the effects of the 1988 fires made the original proposal for replacement unworkable. Consequently, a new proposal was developed for campsite relocation that was less ecologically damaging. The new proposal would locate 175 campsites at Norris, 100 campsites at Canyon, and 35 campsites at Grant Village. A Denver Service Center design team continued development of a comprehensive layout for the replacement camping sites at Norris and Canyon.

Road improvement remained a focus of planning in 1994. The *Environmental Assessment, Madison to Biscuit Basin Road Improvement* was on 60-day public review during the spring, and the Finding of No Significant Impact was signed on July 13, 1994. A contract for the first phase of construction was awarded in late September, and clearing trees within the construction limits began in October. To the north of Madison Junction, data collection and preliminary design commenced for the Madison-to-Norris road improvement project. The Madison-to-Norris project represents the first attempt by the park, region, DSC, and Federal Highway Administration to put road improvement projects on a four-year timeframe (from project conception to initial contract award). Resource data collection in 1994 concentrated on wetlands, rare plants, and cultural sites. Initial screening of alignment alternatives began. On the east side of the park, design for the segment of road from Pelican Creek to Lake Butte continued, reaching the 70 percent completion stage at year's end. That contract was slated for award in 1995. Construction work on the segment of East Entrance Road from Lake Butte to Sylvan Pass was in its first year of construction with an emphasis on clearing and grading.

Winter Visitor Use Management gathered momentum in 1994 with the effort being expanded to include the surrounding national forests. Winter visitation has increased dramatically from virtually none 30 years ago to more than 140,000 visits per season. In the joint 1990 *Winter Use Plan* (for Yellowstone and Grand Teton National Parks and John D. Rockefeller Jr., Memorial Parkway), a commitment was made to establish a Visitor Use Management process if winter visitation exceeded *Winter Use Plan's* projection for the year 2000. The threshold was reached in the 1992-1993 winter season. In 1993, Yellowstone and Grand Teton National Parks completed a Winter Visitor Use Management Work Plan. In January 1994, the Greater Yellowstone Coordinating Committee agreed that the national forests in the Greater Yellowstone Area should also participate in the winter visitor use management planning. An interagency team was formed and adopted the Visitor Experience Resource Protection model being tested at Arches National Park for greater Yellowstone winter visitor use. The team developed a list of issues and goals for winter visitor use and began mapping and analyzing resources and visitor experiences.

Upwards of 300 bison moved out of the park in late 1994, disrupting a tenuous alliance between the NPS, USFS, Montana Dept. of Livestock, Montana Dept. of Fish, Wildlife and Parks, and Animal Plant Health Inspection Service (a bureau within USDA). The agencies had been writing a long-term Bison Management Plan and EIS and had produced an interagency review draft in December. The co-lead and cooperating agencies were requested to review the draft and comment by January 20, 1995; however, with the movement of bison out of the park onto Gallatin

National Forest and private lands and with the threatened loss of brucellosis-free status, the state of Montana chose to sue the National Park Service and APHIS. The lawsuit was filed despite the effective implementation of an interim management plan agreed to by the agencies in late-1991 which had prevented contact between bison and cattle. The lawsuit brought a halt to preparation of the long-term plan.

Accessibility had a number of notable successes during the year. The parkwide accessibility evaluation (the 504 inventory) was completed in manual (non-computerized) format in the summer of 1994. An emphasis was placed on modifying concessions facilities using their capital improvement and maintenance programs to accomplish the work. Eight additional lodging units were made accessible, access to stores and food service facilities were improved, and several additional restrooms throughout the park were made accessible. An accessible backcountry trail was completed with help of SCA volunteers. An accessibility workshop was conducted for 40 park employees and concessioners. This workshop succeeded in increasing employee understanding of the regulations and procedures associated with the accessibility program.

In December 1991, Congress authorized a study of alternative modes of transportation in national parks as part of the Intermodal Surface Transportation Efficiency Act. Three parks, Yellowstone, Yosemite, and Denali, were targeted, although the report should have servicewide implications. The report was completed and printed in September 1994. At year's end, the National Park Service was waiting for the U.S. Department of Transportation to submit the study to Congress so that the report could be released to the public.

Also at year's end, preparation of a housing plan for the Mammoth area was launched to address the needs of NPS, concessioner, and cooperators for housing in the Mammoth Hot Springs and North Entrance areas. NPS personnel, in conjunction with planners and landscape architects from the consulting firms of The Roybal Corporation and DHM, Inc., began collecting resource information and formulating possible alternatives for replacing substandard housing and meeting long-term housing needs.

Other projects in 1994 included initiation of planning for restoration of the Boundary Lands Area (Stephen's Creek), preparation of an updated Exotic Vegetation Management Plan, continued work on both an updated Resources Management Plan and Backcountry Management Plan, and assistance with Snow Lodge replacement, trailer and substandard housing replacement (implementation of the *Employee Housing Plan*), and abandoned mine lands reclamation. The project tracking/status system was used to process 36 small projects (all deemed categorically excluded from further NEPA compliance).

Branch of Advanced Resource Technology

The Branch of Advanced Resource Technology (BART) was formed in 1993 to facilitate the use of GIS and landscape analysis in Yellowstone National Park. Its objectives are to complete the basic layers needed for this analysis, to provide GIS analytical products for the most important management needs, to more fully utilize our large existing spatial data base, and to improve availability of functioning systems for experienced users.

We have made some progress on all objectives. The last remaining landscape layer (soils) is nearly complete (September 1995). We have done demonstration products for critical management needs and have upgraded and documented about 1/2 of our available data. We have upgraded and maintained equipment for experienced users. We have recently obtained sufficient equipment to run a fully functional GIS program and installed industry standard software (ARC/INFO); however, we have had no professional full-time GIS staff since the Branch's inception. We have begun the hiring process five times and have been unable to obtain a qualified person under the conditions we have offered. We have provided our GIS services using part-time volunteers, soils staff, the BART manager, and a cooperative agreement with Montana State University.

Though this is sufficient to keep the program alive, it does not reach the above objectives. We are in the process of revising our program to more fully meet them.

Branch of Natural Resources

Staff members continued to be involved with external issues in 1994. The major issues included the proposed Crown Butte Gold Mine (Noranda) at Cooke City, the Montana Water Compact, the proposal to expand the Gardiner Airport, air quality-related issues at West Yellowstone, the Mineral Hill Mine expansion into Crevice Creek at Jardine, McLaren Mine Tailings, and geothermal issues with the Church Universal and Triumphant. Internal issues also required considerable time and included development issues (highways and housing), media contacts and presentation, grayling reintroduction, lake trout invasion into Yellowstone Lake, gravel pit mitigations, grizzly bear conservation strategy, the Backcountry Management Plan, the Resource Management Plan, and boundary land area restoration.

Non-Native Lake Trout Discovered In Yellowstone Lake

In late July and early August, lake trout (*Salvelinus namaycush*) were caught in Yellowstone Lake. For more than one hundred years of Yellowstone's history, despite numerous other transplants of non-native fish into lakes and rivers of the park, Yellowstone Lake remained the major stronghold of the cutthroat trout--the

park's only native salmonid. The discovery of lake trout now threatens the Yellowstone cutthroat (*Oncorhynchus clarki bouvieri*) and numerous associated fish-eating animals. Biologists believe that lake trout were deliberately planted in Yellowstone Lake in a misguided attempt to establish someone's favored sport fishery. The differences between lake trout and cutthroat trout are considerable; the lake trout, an accomplished predator on other fishes, clearly has the competitive advantage. The U.S. Fish and Wildlife Service Yellowstone Fisheries Assistance Office, in cooperation with Yellowstone Park staff, responded to the lake trout situation once the evidence was in hand. The park's Resource Council assigned a Lake Trout Resource Team to address this issue.

A Yellowstone Lake Workshop is planned for early 1995 to discuss this issue and identify and develop mitigating efforts.

Lead-Free Fishing Initiative

Nineteen ninety-four marked the first year for implementing the lead-free fishing program in Yellowstone Park. A video titled "Fishing with a Conscience" was produced by the park to educate anglers about the dilemma swans and loons face in regards to fishing weight lead poisoning. The video has been widely accepted and has proven very useful in educating the public regarding this matter. Anglers have accepted the lead-free fishing policy with surprisingly few complaints.

Old Faithful Geyser Slowing to Record Long Average Intervals

Old Faithful Geyser, during the last few months of 1994, is continuing a trend toward longer intervals between eruptions. For most of its 125 year recorded history, Old Faithful's average interval remained stable at around 66 minutes. It is speculated that increased winter and shoulder season visitation giving rise to unchecked night-time vandalism beginning in the mid to late 1970s and major seismic activity with the 1983 Borah Peak magnitude 7.3 earthquake, the geyser's eruptive behavior has been significantly impacted. Over the last 15 years, the average interval has almost consistently remained over 70 minutes. In recent years, it has surpassed 75 minutes and now appears to be approaching record high levels near 80 minutes.

Eocene Plant Fossils Identified Along East Entrance Road

While working on the East Entrance road project, several large fossil leaf imprints were discovered on June 3, 1994. Along the road, a bulldozer exposed a fossil-rich cut. After the initial visit by park employees, an Incident Command Team, headed by Landscape Architect Eleanor Williams, was established to develop a strategy for collection and mitigation of the plant fossils. Most of the excavation work was done with bulldozers and large

road scrapers at night, increasing the challenge of finding fossil resources. The fossils were collected and the best leaf specimens are being temporarily stored at park headquarters.

The fossils are from the Absaroka Volcanics Langford Formation and are similar to others from Eocene-age deposits found elsewhere in and near the park. At that time, the environment was more sub-tropical than Yellowstone's present environment; thus, the fossil plants identified frequently represent genera and species not found in the park today. A majority of the leaf fossils found to date have been tentatively identified as an extinct genus of sycamores. They were a pioneering type of tree which tend to quickly spread along stream and debris-flow channels of the active stratovolcanoes. All the fossils have thus far been found in a small lens of fine-grained volcanic sandstone, less than 30 centimeters thick and 6 meters wide. This very local layer was deposited in a small pond or gully.

Several factors make the discovery remarkable including the excellent degree of leaf preservation. They are often found curled or contorted, indicating that they were buried violently in a viscous, cement-like flow that swept rapidly down the sides of volcanoes. Had the deposition been gradual and less violent, the fossils would be lying in flat, horizontal layers. The sheer size of the leaves is impressive; some leaf clusters are as large as supper platters 40 centimeters (16 inches) in diameter! After evaluation by visiting scientists, construction resumed on June 13.

Alternative Fuel Bear Attractant Test

The Montana Department of Natural Resource & Conservation has thus begun research concerning alternative fuel use to accommodate the increasing volume of visitors while preserving Montana's scenic resources. DNRC has developed biodiesel fuel comprised of canola/rape ethyl ester oil which will be tested in a pilot study within Yellowstone National Park.

Tests are needed to first determine if the raw biodiesel fuel or its emissions are bear attractants. If the biodiesel fuel proves to be a bear attractant, then a second objective will be to determine a blend of diesel and biodiesel fuel that will not act as an attractant to bears or other wildlife. The Bear Management Office was asked to conduct the bear attractant tests of the biodiesel fuel. The study will be conducted in conjunction with Washington State University in April 1995.

Bear Management Activities

Availability of Bear Foods

The year 1994 was very poor for bear foods in the Yellowstone ecosystem. The abundance of winter-killed carrion, cutthroat trout, vegetal foods, army cutworm moths, and whitebark pine nuts were all lower than average. Because of the mild winter, very few winter-killed ungulate carcasses were available for bears to scavenge on in spring. Winter-killed carcasses are an important high quality food source for bears in early spring before most vegetal foods become available. Elk calves, an important late spring and early summer food source, appeared to be abundant and were preyed upon extensively by bears. The numbers of spawning cutthroat trout in Yellowstone Lake tributaries were lower than average this summer; spawning cutthroat trout, available to bears during the spring and early summer, rank as one of the highest sources of net digestible energy for bears in the Yellowstone ecosystem. The summer of 1994 was also dryer than average, and as a result, most vegetal bear foods became desiccated early. Army cutworm moths, an important late summer food, appeared less abundant than in recent years. In addition, whitebark pine trees within the Yellowstone ecosystem produced almost no cones this year. Whitebark pine seeds are especially important because of their high fat content and their potential abundance as a prehibernation food source. The combination of all these factors left bears with very few successful foraging opportunities, especially during the late summer/fall period of hyperphagia.

As a result of the poor food year for bears, areas outside of YNP experienced a much higher than average number of bear-human conflict situations at lodges, campgrounds, and private homes. Outside of the park, there were 32 management trappings of grizzly bears involved in bear-human conflict situations. The park had to trap only 2 grizzly bears this year, both were bears that had been moved into the park after becoming conditioned to human foods outside of the park. No nuisance black bears were trapped in 1994.

Grizzly Bear Recovery Status

In 1994, the Yellowstone ecosystem grizzly bear population met all 3 population recovery parameters as required by ESA for the first time. A Conservation Strategy is currently being written for the Yellowstone ecosystem grizzly bear population in order to meet the fourth goal.

Habitat Monitoring

Ungulates, cutthroat trout (*Oncorhynchus clarki*) and whitebark pine (*Pinus albicaulis*) are considered three of the highest sources of net digestible energy for grizzly bears in the

Yellowstone ecosystem. Due to the importance of these three food sources to bears, YNP resource management staff monitor the availability and associated bear use of these resources within the park.

Winter-killed Ungulate Carcass And Associated Bear Use Surveys

During the spring of each year, YNP Resource Management personnel survey 82.5 km of winter range in the Firehole River drainage, 17 km of survey routes in the Norris Geyser Basin, and 27 km of survey routes in the Heart Lake area. Survey routes are hiked, snowshoed, or skied by teams of at least two people. All ungulate carcasses, as well as bears and bear sign (tracks, scat, feeding sign) observed from the survey routes, are recorded. Data collected include species of carcass, estimated date and cause of death, scavenging by bears, species of bear using the carcass, and UTM location.

In 1994, 5 bison carcasses and 1 elk carcass were documented along 126.5 km of survey routes. In addition, grizzly bear sign was observed in all three survey areas. Black bear sign was observed in the Heart Lake survey area. The number of carcasses observed per survey km was highest (0.07 per survey km) in the Firehole area and lowest in the Heart Lake area (0 carcasses per survey km). The rate of 1 large mammal carcass observed per 20 km of survey route in 1994 was much lower than the rate of 1 carcass per 6 km of survey route recorded in 1993 and the rate of 1 carcass per 4 km of survey route recorded in 1992.

Cutthroat Trout Spawning Stream And Associated Bear Use Survey

Due to their high digestibility and protein and lipid content, spawning cutthroat trout (*Oncorhynchus clarki*) are an important high quality food source for grizzly bears in YNP. Grizzly bears are known to prey on cutthroat trout in at least 36 different streams tributary to Yellowstone Lake. In 1987, Reinhart and Mattson (1990) estimated that approximately 44 different autonomous bears were making use of spawning streams around Yellowstone Lake. Each year, YNP Resource Management Coordinators and their staff conduct surveys along eight streams within or near the Lake developed area and four streams within or near the Grant Village area.

In 1994, a total of 488 spawning cutthroat trout were counted in the 12 tributaries to Yellowstone Lake that are monitored. Grizzly bear activity was observed on 4 of these streams and black bear activity on 5. The numbers of spawners counted in 1994 was the lowest since the surveys were started in 1986.

With the added goal of long term habitat monitoring as part of the *Draft Grizzly Bear Conservation Strategy* document, representative streams from the east and west shores of

Yellowstone Lake should also be surveyed. It is probably not necessary to survey streams in the south arms of the lake because very little bear fishing activity occurs along those streams.

Whitebark Pine Cone Production Survey

Whitebark pine seeds are an important food source for bears in the Yellowstone ecosystem due to their high fat content and their potential abundance as a pre-hibernation food source. The number of nuisance grizzly bears that must be trapped in management actions is significantly higher during years of poor whitebark pine cone production than during years of abundant cone production. As part of an ecosystem-wide whitebark pine survey, cone counts are conducted at 19 whitebark pine transects located within the Yellowstone ecosystem. Park Resource Management staff conduct cone counts on the 10 transects located within YNP. Cone counts at these 10 transects averaged less than 1 cone per tree in 1994. The 14-year (1980-1993) average for all transects located within the Yellowstone ecosystem is approximately 15 cones per tree, per year. Bears generally do not make widespread use of whitebark seeds as a food source unless production exceeds 22 cones per tree.

Bear Food Habits Monitoring

The long term variation in bear food habits due to the variability in the availability of high-quality foods in the Yellowstone ecosystem is being studied by the Interagency Grizzly Bear Study Team. YNP is assisting the IGBST with this bear food habits study. As part of this program, YNP resource management staff collect bear scats encountered while performing regular duties. Scats collected are sent to the IGBST for analysis and results published in the IGBST annual report. In 1994, YNP staff collected 67 bear scats for the IGBST.

Bear Sightings In YNP

There were 1,822 bear sighting reports recorded in 1994. These reports included 703 observations of grizzly bears, 791 of black bears, and 135 of unknown species of bear. In addition, there were 95 observations of grizzly bear sign, 16 of black bear sign, and 82 of sign from unknown species of bear as well as 703 (363 in YNP) grizzly bear radio telemetry location reports. The first reported bear activity of the year was an observation of bear tracks (unknown species) in Hayden Valley on March 4. The last bear observation of the year was a sighting of an unknown species of bear observed on December 30 near the Fairy Falls Trailhead.

Grizzly Bear Population Monitoring In Yellowstone Ecosystem

As part of grizzly bear population trend monitoring in the Yellowstone ecosystem, the number of adult female grizzly bears with cubs-of-the-year (COY) are counted each year by the IGBST.

Observations of female grizzly bears with COY turned in by park employees are used by the Interagency IGBST as one component of their population monitoring program. There were 20 different females with 47 cubs (mean litter size 2.35 cubs/litter) counted in the Yellowstone Ecosystem in 1994. In 1993, 20 different females with 41 COY (average litter size 2.05 cubs/litter) were counted. In 1992, 23 females with 56 COY (average litter size 2.43) were counted. The highest number of females with COY counted in the ecosystem was 25 in 1986; the most cubs counted was 57 in 1990. The largest average litter size was 2.43 cubs/litter in 1992. The 6-year average of unduplicated females with COY has steadily increased from 12 females per year from 1973-78 to 21 females per year during the period 1987-94.

Bear Mortality

There was one known grizzly bear mortality and two known black bear mortalities within YNP in 1994. In addition, the partial skull of a COY bear that could not be identified to species was found.

Grizzly Bear Mortalities Within YNP

On August 1, 1994, bear #223, a 180-pound, two-year-old male grizzly bear was trapped in the Grant Village Campground. Bear #223 had entered the campground around midnight and damaged property at four campsites while attempting to obtain human foods. The bear successfully obtained food at two of the sites. Due to the bears previous history of bear-human conflict in the states of Montana and Idaho and in concurrence with the U.S. Fish and Wildlife Service Grizzly Bear Recovery Coordinator, it was removed from the park and sent to the John Ball Zoological Park in Grand Rapids, Michigan (removals such as this are considered an ecosystem mortality).

In addition, there was one probable natural mortality of a yearling of grizzly bear #205 (D. Knight, Interagency Grizzly Bear Study Team, pers. commun.) The yearling was observed with bear #205 in the fall of 1993 but was not observed with her after den emergence in 1994.

Black Bear Mortalities Within YNP

There were two known black bear mortalities within YNP in 1994. On April 22, an old adult female that was accompanied by a yearling died near Wickiup Creek on the west side of the park.

The severe state of emaciation in the 20- to 30-year old 47 lb. adult female bear and evidence of external parasitism by fleas (*Arctopsylla*) suggest malnutrition as the underlying cause of the animal's death. The male yearling weighed 35 lbs. and appeared healthy and was thought to have survived.

On August 12, a male black bear COY weighing 45 lbs. was hit and killed by a vehicle two miles south of Tower Falls. The vehicle was travelling at about 20 mph when the bear ran into the roadway in front of the vehicle. The vehicle struck the bear in the rear quarters killing the bear.

In addition, a partial skull of a COY bear was found near Trilobite Lake. The remains did not allow a definite species identification, however, comparisons with known reference materials were more consistent with black bear than grizzly.

Bear-Human Conflicts In YNP

In 1994, there were 93 reported bear jams, 6 bear-caused property damages (in which bears did not obtain human foods), 9 incidents in which bears obtained human foods or garbage, and 4 bear-caused human injuries within the park (following Table). In addition, there were 14 reported confrontations between bears and people in which no one was hurt.

Most of the bear-human conflicts occurred in the Tower and Mammoth subdistricts (Table 7). The Tower and Mammoth subdistricts are also the areas of the park that had the most bear activity reported in 1994 (Table 4).

Number of incidents in which grizzly, black, or unknown species of bear damaged property, obtained human foods or garbage, injured people, or were involved in a confrontation with people in Yellowstone National Park, 1994.

Type of Conflict	Grizzly Bear	Black Bear	Unknown Species	Total
Bear-Jams	26	63	4	93
Confrontations	12	2	0	14
Property Damage	0	3	3	6
Sanitation	5	2	2	9
Human Injury	4	0	0	4

Bear-Caused Property Damages

There were six incidents in which bears damaged property (but did not obtain human foods) reported in YNP in 1994. Black bears were involved in three of the incidents. The species involved could not be identified in the other three incidents.

Sanitation/Unnatural Foods

There were nine incidents in which bears obtained human foods or garbage within YNP reported in 1994. Grizzly bears were involved in five of the incidents and black bears in two. The species of bear could not be identified in two of the incidents.

Bear-Caused Human Injuries

There were four bear-caused human injuries within YNP in 1994; all four were caused by grizzly bears. This was higher than the 10-year average of 1 (± 1.7 SD) bear-caused human injury per year recorded during the 10-year period from 1984-1993.

Bear-Vehicle Collisions

There were five black bears and one unknown species of bear hit by vehicles in 1994. No grizzly bears were known to have been involved in collisions with vehicles. In five of the six incidents, the bears ran off after the collisions. In these five incidents, no injured or dead bears were found upon further investigation. One black bear was known to have died after being hit by a vehicle.

Bear Management Actions

There were 85 bear related incidents within YNP in which management action was taken in 1994. These actions included 38 incidents in which bear warnings were posted at campsites, trails, or areas; 38 incidents in which campsites, trails or areas were temporarily closed; 7 incidents in which aversive conditioning of bears was conducted, 1 incident in which a bear was trapped and translocated; and 1 incident in which a bear was trapped and removed from the ecosystem.

The Tower and Mammoth subdistricts had the most bear management actions taken within the park. The Tower and Mammoth subdistricts were also the areas with the most bear activity and bear-human conflicts reported.

WOLF AND RARE ANIMAL SIGHTINGS REPORTING SYSTEM

Wolf Sightings

There were 188 reports of wolf observations reported during 1994. These reports included 177 observations from within YNP and 11 reports from outside the park. Physical evidence such as videos, photos, plaster casts of tracks, or measurements of vegetation (for comparison to height of animal) were collected whenever possible. Of the 177 observations from within YNP, none could be confirmed as a wolf through physical evidence.

Rare Animal Sightings

During 1994, there were 274 observations of rare animals reported to the Bear Management Office. These sightings included small animals such as amphibians and reptiles to large animals such as mountain lions and mountain goats. The most unique sighting reported was of 2 pronghorn antelope carcasses observed floating in Yellowstone Lake.

WILDLIFE CARCASS MANAGEMENT AND WILDLIFE SAMPLING

Road-Killed Wildlife

Yellowstone National Park keeps records of the number of large mammals (species in which adults can weigh 30 lbs. or more) hit and killed by vehicles on roads within the park. The primary objectives for keeping records of wildlife carcasses are to: 1) facilitate the proper disposal of large mammal carcasses so as to reduce the potential for bear-human conflicts at carcass sites, 2) reduce the potential road hazard to scavengers that may be attracted to large mammal carcasses, 3) ensure the efficient sampling of carcasses for all the different research and resource management programs requesting samples from carcasses, and 4) prevent a non-natural accumulation of scavenger foods at carcass disposal sites.

Road-killed wildlife data was collected from park ranger case incident reports and from reports turned in by other park employees and visitors. The reporting rate for road-killed large mammals that die within site of the road is considered to be high, probably approaching 100%. An unknown number of animals are hit by vehicles and survive long enough to move out of sight of the road before dying and are not found or reported.

In 1994, a total of 148 large mammals that were hit and killed by vehicles within the park were reported to the Bear Management Office.

Mule deer (35%), and elk (33%) were the species most often killed in accidents with vehicles. Other species killed by vehicles include coyote (13%), moose (8%), bison (7%), whitetail deer (1%), antelope (1%), black bear (1%), and raccoon (1%).

Wildlife DNA Program

In 1990, the Division of Resource Management Operations and Visitor Protection identified the need to establish baseline data for DNA fingerprinting of major wildlife species within Yellowstone National Park. The data base would be beneficial in the prosecution of wildlife poaching cases. The Snake River District took the lead role in setting up a working relationship with the Wyoming State Crime Laboratory and in designing the sampling protocol. The Bear Management Office was assigned the responsibility for coordinating parkwide sample collection, sample record keeping, and shipment of samples to the Wyoming Crime Lab for analysis. Samples are collected predominantly from road-killed wildlife, although animals that die of natural and other causes are sometimes sampled.

In 1994, DNA samples were collected from 40 animals representing 6 different species of wildlife. Samples were collected by Resource Management Coordinators, Park Rangers, and Bear Management Office personnel. In 1993, DNA samples were collected from 39 animals representing 8 species of wildlife and in 1992 samples were collected from 31 animals representing 7 species of wildlife.

After four years (1991-1994) of the program, 179 animals representing 9 different species of wildlife have been sampled. A sample size of 50 has been achieved for bison and mule deer and is likely to be achieved within a few years for elk and possibly moose. A sample size of 50 is unlikely to be achieved for antelope, bighorn sheep, black bear, grizzly bear, mountain goat, mountain lion and whitetail deer which are infrequently killed by vehicles.

Beaver Survey

In 1988-89, Consolo [Murphy] and Hanson surveyed riparian habitat in Yellowstone National Park (YNP) to determine current presence and distribution of beaver (*Castor canadensis*). Results indicated that at least 13 streams or stream segments in the southeast, southwest, and northwest portions of the park were predicted to be continuously occupied by beaver; monitoring river segments and pond sites at an approximate 5-year interval was recommended to assess changes in the status of beaver in YNP. In 1994, a sampling survey was again completed, primarily between August 15 and November 15, 1994. Biologists surveyed 403.97 km (251 mi.) of riparian habitat including 75 lakes and stream segments in the 5 major drainages of YNP. Twenty-one beaver

sightings of from one to three beaver were recorded, representing at least 20 individual animals, 78 lodges, of which 44 (56 percent) appeared to be active in 1994, and 113 dams. At least 28 lakes, streams, or stream segments had signs of both current and old activity indicating persistent occupation by beaver. No population estimates or trends can be construed from these data; however, it is believed that beaver are distributed throughout Yellowstone National Park although not uniformly. Activity is abundant in the southeast, southwest, and northwest corners where habitat appears most suitable. At least 14 streams or stream segments are again predicted to be high quality habitat continuously occupied by beaver; these include segments of river up to or exceeding 19.3 km in length and the extensive Yellowstone River delta where it enters the Southeast Arm of Yellowstone Lake. A complete 16-page report is on file with the Yellowstone Center for Resources and the park library.

Mid-Sized Carnivore Survey

In the winter of 1993-94, the park cooperated with biologists and volunteers from Yellowstone Ecosystem Studies to sample for presence of rarely-seen, mid-sized carnivores particularly wolverine, lynx, fisher, red fox, and bobcat. The park, as well as the surrounding states and national forests, all lack good baseline information on the status and distribution of these animals. Lynx and fisher have not been conclusively documented in YNP, are not represented in the park's museum collection, and may not have ever had viable populations here, but both are candidate species for listing under the Endangered Species Act as is the wolverine. We used track surveys, remote automated camera, and guard hair snares in winter to sample for presence of the target species. Between the park and its cooperators, 20 hair snares were operated for 1,609 snare-nights, and 27 hair samples were collected during 62 visits; analysis and identification of the hair samples is not yet complete. Twelve camera stations operated a total of 961 camera nights and received 176 visits resulting in 274 photographs. Most were of pine martens and red fox; however, one wolverine was photographed twice at the same location in Cinnabar Basin. Track transects totalled 31 times on 14 trails; coyote tracks were encountered most frequently but other tracks identified included those of mountain lion, red fox, red squirrel, snowshoe hare, pine marten, weasel, one wolverine, and four possible fisher. This project is being continued in the winter of 1994-95.

Birds

Yellowstone assisted two important scientific bird conservation programs by contributing substantial amounts of bird data to The Nature Conservancy's Greater Yellowstone Conservation Data Center and the Wyoming Gap Analysis Project (GAP).

Four Breeding Bird Surveys were conducted in 1994 to keep abreast of bird population changes should they occur. Of particular international importance are Neotropical Migrant Birds and the annual winter Bald Eagle Survey. As usual, the traditional Yellowstone Christmas Bird Count was conducted in December to document wintering birds. Yellowstone has been asked to participate in another monitoring project next year called Project Tanager which will monitor tanager populations in this area of the Rocky Mountains.

Peregrine Falcons are well on their way to recovery, and Yellowstone is, undoubtedly, the forerunner in the recovery effort in the Northern Rockies primarily due to the quality of the habitat and our intensive monitoring effort. This year, a total of 11 eyries were monitored, fledging a total of 16 young from natural eyries. The first eyrie was discovered in 1984 and was monitored through 1986, then the population skyrocketed from that point in time as new eyries began to appear.

Bald Eagles continue to show promise in recovery in both Yellowstone National Park and throughout the Greater Yellowstone Area. From 1982 to 1994, the number of bald eagle-occupied territories in the park has doubled and currently remains at 20 occupied territories. Bald eagle production in Yellowstone is totally at the mercy of the weather. The number of fledgling bald eagles in Yellowstone has varied from as low as one in 1982 to as high as 17 in 1993. A significant turn of events happened in 1989, the year following the 1988 Yellowstone wildfires, when the number of fledglings dropped from 12 in 1988 to three in 1989. The dramatic change in bald eagle production was due to unstable nesting trees as a result of the wildfires. Bald eagles have responded positively to the wildfires, however. In 1994, 13 young fledged from 20 occupied territories. One of our Yellowstone staff biologists chaired the Greater Yellowstone Bald Eagle Working Group for the last three years. As a result of that effort, a revised GYE Bald Eagle Management Plan will be published the beginning of next year.

The experimental whooping crane population in the Greater Yellowstone is not doing very well due to the inability of the cranes to breed in the wild. In 1994, only one whooping crane resided in the park during the spring and summer.

Trumpeter swans in Yellowstone continue to live on the edge of existence. Of the nine nest attempts, only four pairs were fortunate enough to hatch young. And only one swan pair was successful in fledging young, that pair being from the Seven Mile Bridge area. An interagency trumpeter swan survey conducted in September tallied 27 adults and five cygnets in Yellowstone. Efforts to reduce the mute swan threat in Paradise Valley are working. Only one mute swan remains in the valley. Whereas due to the efforts of the Trumpeter Swan Recovery Fund established in

Yellowstone National Park, a total of 21 trumpeter swans now reside on private ranches in Paradise Valley. Of the three nest attempts in Paradise Valley this year, one pair on the Bailey Ranch was able to fledge three cygnets. Through hard work and perseverance, a backup trumpeter swan population exists in Paradise Valley, which will ultimately help the fragile Yellowstone trumpeter swan population.

Ospreys continue to experience the most overwhelming population change since the 1988 Yellowstone wildfires. This year we broke the century mark, when 101 young fledged from 100 osprey nests. The abundance of dead snags as a result of the wildfires, coupled with an abundance of fish, have contributed to this outstanding population increase.

Common loons continue to hold their own. Of the 11 nest attempts, seven pair were successful in raising a total of 11 loonlets.

Harlequin ducks continued to be monitored on a park-wide basis with special attention being given to the LeHardy Rapids area. Recent concern for harlequins was due to the significant increase in visitors in this area; management actions have included temporary area closures during 1991-1993. From 1994-96, during the period of May 1 through June 7, visitors will be restricted to the south boardwalk in order to assess resource impacts.

Colonial nesting birds on Yellowstone Lake are important environmental indicators and will play a bigger role now that lake trout have been discovered on Yellowstone Lake. In 1994, there were a total of 839 American white pelican nest attempts on the Molly Islands fledging a total of 210 young. Double-crested cormorants fared slightly better; of the 125 nest attempts, 270 cormorant chicks fledged. California gull production was reasonable; a total of 240 chicks fledged from 151 nests. Caspian terns did fairly well; 15 nest attempts produced 22 fledglings.

During 1994, our staff biologist participated on the following Interagency Working Groups: Harlequin Duck, Trumpeter Swan, Bald Eagle, Peregrine Falcon, Watchable Wildlife, Partners in Flight (Neotropical Migrants), and the Montana Bird Records Committee.

Wetlands

Wetlands were mapped and described along a 400+ foot wide, eleven mile-long road corridor between Madison Junction and Norris in conjunction with the parkwide road reconstruction program.

The USFWS began mapping and classifying wetlands in Yellowstone National Park and portions of Grand Teton National Park as part of their National Wetlands Inventory program. Park staff will

be reviewing and groundtruthing the 1:24,000 scale draft maps during summer 1995.

Water Resources

Yellowstone Park and NPS Water Resources Division staff installed a stream gaging station on Soda Butte Creek near the park's northeast boundary. Data gathered by park staff are used to monitor stream flow in conjunction with the MT/NPS Reserved Water Rights Compact.

The Old Faithful Protection Act of 1993 was re-introduced by U.S. Representative Pat Williams (MT).

Air Resources

Yellowstone Park staff worked with the NPS Air Resources Division to develop a 1994-1995 winter-season air quality monitoring project at the West Entrance. Carbon monoxide and particulate matter less than 10 microns in size will be monitored to address concerns about local air quality due to vehicle emissions and wood smoke.

External Affairs Issues

New World Mine - Preparation of a draft EIS for the proposed New World gold mine to be located within 2.5 miles of the park's northeast boundary is underway. The NPS is actively participating in the process as a cooperating agency. Mary Hektner, Resource Management Specialist from Yellowstone is the NPS representative. The park hosted two on-site field trips for NPS, Department of the Interior, Environmental Protection Agency, and Department of Justice officials. The proposed project has received national attention from the media and environmental groups. Park staff responded to thirteen Congressional requests for information about the proposed mine and the park's concerns.

Mineral Hill Mine - TVX Gold Inc. began expanding its Mineral Hill gold mine underground operations into the headwaters area of Crevice Creek which flows into the park. Park staff continued to monitor the project and attend the community task force meetings.

Gardiner Airport Expansion - Park staff reviewed and commented on a draft Environmental Assessment for a proposal to expand the Gardiner, Montana, Airport located immediately adjacent to the park's northern boundary.

McLaren Mine Tailings - Park staff continued exploring options for treatment and removal of the McLaren mine tailings which are located upstream and just outside the park's northeast boundary. The park provided funds to Dr. Del Nimmo of the National Biological Service to continue his toxicity studies of the leachates and sediments from the tailings.

Superintendent's Annual Report

Yellowstone National Park
1995

M.V. Finley *11/25/96*

Michael V. Finley, Superintendent

YELLOWSTONE
NATIONAL PARK
LIBRARY

SUPERINTENDENT'S FOREWORD

1995 represented the first full year that Superintendent Michael V. Finley spent in Yellowstone after having arrived in November of 1994; the Assistant Superintendent's position remained vacant for the entire year due to budgetary constraints. Jean Nuetzel continued as the Administrative Assistant and Jan Laye continued as Secretary in the Superintendent's Office.

With Superintendent Finley's arrival came the advent of ALL EMPLOYEES MEETINGS. Three such meetings were held in 1995; January 11 at the Mammoth Rec Hall, May 31 at the Old Faithful Rec Hall, and September 12 at Lake Lodge Rec Hall. Superintendent Finley took these opportunities to update park employees on park issues, distribute length of service awards, and recognize individuals for special achievements and/or awards.

Superintendent Finley traveled out of the park approximately 30 times during the year attending meetings having to do with such matters as the Intermountain Field Area Rocky Mountain cluster, the New World Mine EIS, the Interim Bison Management Plan, Yellowstone Ecosystem Subcommittee and Greater Yellowstone Coordinating Committee, concessions, Federal Highways, gateway communities' concerns, etc.

The Superintendent's Office dealt with responses to approximately 70 Congressional requests for information. These Congressional requests came in the form of constituency concerns regarding everything from condition of park roads, to recycling, to handicapped accessibility, to treatment of construction workers who work on park contracts. The park also continues to receive letters about the 1988 fire season.

Weekly staff meetings and resource councils were held on as regular a basis as Superintendent Finley's schedule would allow. Minutes from those staff meetings are available in the Superintendent's Office or in the Archives.

President Clinton and the First Family spent August 25 in the park as part of a Jackson Hole, Wyoming, vacation. A cadre of helicopters took the President and his entourage to Canyon, Old Faithful, and the Lamar Buffalo Ranch that day. The First Family toured the sights and, at Lamar, President Clinton fed the Rose Creek wolves and talked with a group of invited environmentalists in the Lamar Barn before returning to Jackson.

There were two government shutdowns before the end of the calendar year; from November 14-17 and from December 16 to January 6, 1996. The second shutdown resulted in park visitors at Old Faithful and Mammoth having to leave when park gates were closed. The public was allowed to travel from the North Entrance to the Northeast Entrance; this was done mainly for the residents of Cooke City and Silver Gate, Montana, who have only this park road for access to the outside world during the winter.

TABLE OF CONTENTS

<u>DIVISION</u>	<u>PAGE</u>
Administration	1
Concessions Management	6
Interpretation	11
Maintenance	23
Public Affairs	33
Resource Management Operations and Visitor Protection	37
Yellowstone Center for Resources	51

ADMINISTRATION

1995 was a watershed year for Yellowstone Administration. The position of Administrative Officer was filled with acting assignments for the entire year. The Division attempted to do more with less in the face of budget cuts and streamlining efforts. Georgia Amundson was Acting Administrative Officer from January through April while continuing to perform her assigned duties as Supervisory Contracting Officer. Joanne Timmins was Acting Administrative Officer through the remainder of the year while continuing to serve as Personnel Officer.

The Division Budget for FY 95 was:

ONPS	\$2,100,000
VIP	<u>10,000</u>
	\$2,110,000

Information Systems Management

Several major personnel changes took place in Information Systems Management during 1995. Gary Matthews was appointed to a two-year temporary position as a Management Analyst, Gerry Townsend transferred to the Alaska Field Area, and Harold Anderson took a temporary detail to fill in behind him while continuing to supervise the Electric Shop. Joyce Ludwig transferred to the Ranger Division, and Sonya Anderson was selected to replace her.

Telephone Service

Yellowstone's telephone system continued to expand and upgrade as funding and time allowed. The Mammoth Public Branch Exchange (PBX) terminal was expanded by two cards (@ \$3,700 each), 32 lines, and associated wiring. Additional expansion is planned for 1996.

Cut-over to the Albright Visitor Center was finalized resulting in a savings of approximately \$750 a month.

Cabling of new facilities was planned for the new Fire Cache, Yellowstone Center for Resources, and other out buildings at Mammoth. Ongoing upgrades, additions, move changes, and programming of existing equipment still comprise the majority of our time.

Radio System Planning

The radio system continued to expand and upgrade. A new travel information system was installed at Madison. Late in the year, the staff performed controlled maintenance on repeaters and replaced batteries on Mount Washburn and Mount Holmes. Ongoing efforts continued for compliance with the new narrow band radio

requirements; all new purchases met this criteria. A target date of year 2005 is set for total compliance with preliminary cost estimates at \$2,000,000.

Support was provided to neighboring parks--Big Horn Canyon and Grant Kohrs--for yearly maintenance, upgrading, and a new radio base station at Grant-Kohrs.

The majority of our time and resources is spent with the constant maintenance and reinstallation/relocation of existing equipment.

Alarm and Security Systems

Growth and improvements have continued. The staff installed a donated security video camera at the North Entrance. Alarms and dialers have been added to various water plants, sewage plants, lift stations, and new facilities to monitor critical functions. We continue to provide support and programming for TWRS in their effort to convert to "Radionics" alarm equipment that is compatible with the National Park Service.

Automated Data Processing

The ADP workload for FY 95 consisted mostly of user support and training. New networks were installed for the Wolf Project and Soils/GIS. Upgrades to the YCR/Soils/GIS network and conversion to ethernet in the Administration Building have been started. The Backcountry Permit & Reservation System network with eight remote accesses was put into production. E-Mail (cc:mail) use has been increasing steadily including the addition of a third dial-in line for remote user access. ADP is supporting the WWW/Internet initiatives which started in FY 95. The Law Enforcement Office is now using an inventory program written by ADP in FY 95.

There are two systems still running on the older Datapoint computers; the Bills program and the Supply Inventory program. A new Gas Pump Fuels System program has been written and installed for Property to replace the older Datapoint version.

The number of new computers installed during FY 95 increased by 39 (16%); from 242 to 281 PCs.

Fiscal

In the absence of a Budget Officer in 1995, Debbie Hays of the WASO Budget Office and Rod Rivera of the IMFA served on details here.

The following are the budget figures for FY 95:

A.	ONPS Base Funding		\$21,527,300
1.	Base Funding		\$19,217,000
a.	Regional Programs	\$ 171,700	
b.	Annual Base	16,532,300	
c.	No Year Base	2,513,000	
2.	Regional/Service-wide Projects	\$ 2,310,300	
a.	Cyclic Maint.	\$ 424,000	
b.	Repair/Rehab	978,000	
c.	Hazardous Waste	377,000	
d.	NRPP	440,000	
e.	CRPP	15,000	
f.	Water Resources	6,800	
g.	Collections Mgmt.	20,000	
h.	VIP	10,300	
i.	Air Quality	10,500	
j.	Public Health	24,600	
k.	Challenge Cost Share	4,100	
B.	Construction/Housing Rehab		\$ 1,560,901
C.	Federal Highways Support		992,200
D.	Fee Collection Funding		520,000
E.	School Funding		765,000
F.	Donations		172,894
G.	Special Use Fees		521,375

Personnel

A total of 70 vacancy announcements were issued during 1995, and approximately 2,100 personnel actions were processed.

Personnel participated in four orientations for seasonal employees and also held four general information meetings throughout the park to talk about changes in hiring procedures.

Patty Kremer transferred to Concessions and was replaced by Andy Ludwig.

Retirements/Buy-Outs: Curtis Anderson, Norm Bishop, Terry Danforth, Paul Hantelman, Jim Holden, Karen Hotchkiss, Jerry Mernin, Janet Fay, Walt Milthollin, Delynn Murdoch, Wendell Olsen and Peggy Starkweather.

Vanessa Ford and Joanne Timmins participated in a servicewide meeting of coordinators of new seasonal regulations held in Washington.

The office struggled to meet routine staffing requirements under a very restrictive freeze.

Procurement

Over 4,500 requisitions were processed totaling \$6.6 million.

29 contract actions reported on SF-279s. (One contract for \$151,800 was awarded to a minority-owned business.)

14 new awards

4 services	\$ 736,137
7 supply contracts	\$ 670,418
3 construction	\$1,002,787
16 contract modifications	\$ 182,168
Total	\$2,591,510

<u>Small Purchases</u>	<u>Quantity</u>	<u>Amount</u>
Purchase orders	1,692	\$3,146,527.20
Blanket Purchase Order	44	361,908.40
Third Party Drafts	3,039	1,215,219.32
Imprest Fund	578	9,309.32
FEDSTRIP	178	240,829.00
Customer Supply Store	53	7,065.22
Total		\$4,069,402.70

Supply Center Activities

Total Sales - \$962,848.53. The annual physical inventory of the Supply Center reflected a loss of \$5,193, less than 1% of total sales.

The supply operation recycled 68 bales of corrugated cardboard totaling 10,135 pounds.

Property Management Functions

In cooperation with Yellowstone's Excess Coordinator (Jerry Slaght), we acquired over \$4,000,000 worth of excess vehicles and heavy equipment for this Field Area with approximately \$3,000,000 remaining at Yellowstone.

We also acquired over \$1,000,000 worth of excess items including furniture, building materials, protective clothing, fire fighting equipment, etc.

All quarters inventories were computerized into the QMIS Program and a rental rate increase was implemented.

In cooperation with the Ranger Division, 4,000 lost and found items were processed.

	<u>NPS</u>	<u>TWRS</u>
Reports of Survey	14	19
Report of Excess Property	3	0
Report of Excess Property for Sale	16	32
Transfer of Property	19	9

Current Property Status

	<u>Number of Items</u>	<u>Value</u>
NPS	1,999	12,116,539.72
TWRS	3,184	4,866,995.04

In September 1995, GSA conducted an auction in Yellowstone; there were 167 items sold for over \$264,000.

CONCESSIONS MANAGEMENT

Staffing

Chief, Concessions Management (GS-14/2) - Edna Good
 Asst. Chief, Concessions Management (GS-12/5) - Judy Churchwell
 Conc. Spec., Spec. Accounts/Projects (GS-11/3) - Mary Murphy
 Conc. Spec., Evaluation/Pricing (GS-9) - Barb Riley
 Conc. Spec., Evaluation/Compliance (GS-9) - vacant
 Conc. Asst., Ofc. Mgr./Fin. Asst. (GS-6, STF) - Patty Kremer
 Conc. Clerk, (GS-5/3, PPT) - Debby Young
 Sanitarian, (GS-11/2, STF) - Sara Roser
 Engineer (GS-7/1, Intermittent) - Mary Hudson
 Temporary training detail, (GS-11) - Doug Lentz

FTE: 9

Budget

ONPS:	\$280,000	
U.S. Public	23,100	(partial funding
Health Service:		for Sanitarian position)
TOTAL:	\$303,100	

OTHER: The TWRS oversight account is used on a limited basis for travel or specialized materials in direct support of the special account projects, i.e., meetings out of the park relevant to Capital Improvement Projects such as the Snow Lodge. No personal services are permitted.

Concessions Management

General

1995 gross revenues earned by all concessioners exceeded \$68 million. Concessioners' Annual Financial Reports were reviewed ensuring that they were audited by a certified public accountant and that franchise, building use, and special account fees were properly calculated. Any discrepancies or inaccuracies were noted prior to forwarding the reports to the Systems Support Office and Washington.

The division provided administrative oversight, identified, and prioritized projects and audited special accounts amounting to over \$4.5 million in 1995. The same level of oversight and management was required on a \$4 million cyclic maintenance program.

Two hundred and sixty formal and informal inspections were conducted in guest and employee facilities in the park. Rates were approved based on current comparability studies for food service, overnight lodging, medical services, campgrounds, livery

operations, marinas, gasoline, wrecker/repair service, public showers, laundries, summer/winter transportation, and vending.

All concessioners received satisfactory annual ratings for contract compliance, operations, safety, and sanitation in 1995.

Orientation programs were presented to approximately 3,000 seasonal concession employees during May and June by a uniformed representative of the division.

In 1995, ten concession contracts were issued authorizing interpretive snowmobile tours of the park. Five contracts were issued authorizing interpretive snowcoach tours. These operations had been authorized under commercial use licenses and concessions permits respectively. Converting the snowmobile authorizations from commercial use licenses to permits enabled the Park Service to limit the number of operators. In addition, placing these authorizations under concessions contracts allows the Park Service to require operators to deposit 4 percent of their gross revenue into interest bearing accounts in lieu of franchise fees. This money can be used to improve associated winter facilities in Yellowstone. Winter services were not increased by these contracting actions.

This division provided advise and support to the Ranger Division in administering concessions permits for horse operations. We provided technical review and oversight in preparing the statement of requirements for renewal of these permits.

Operating and maintenance plans were reviewed and revised for TWRS and Yellowstone Medical Services.

The Concessions Management Division initiated work on a Commercial Services Plan. The plan will be used to establish guidelines and parameters for future contracting actions in Yellowstone. An environmental impact statement will be required. It is imperative that the plan be completed early in 1998 since all of the park's major concession contracts expire between 1999 and 2002.

The staff participated on task forces for administering special accounts, contracting, and revising the concessions evaluation and rate approval process. The Chief of Concessions and Assistant Chief are Visitor Use Management Process team members.

TW Recreational Services, Incorporated

TWRS was sold to AMFAC Parks and Resorts, Incorporated in December. The sale includes all TWRS national park operations including Yellowstone, Grand Canyon, Bryce, Zion, Death Valley, Everglades, and Mount Rushmore. Steve Tedder, Vice President and General Manager of Yellowstone's operations will transfer to

AMFAC's corporate headquarters in Denver as Vice President of National Parks. Jim McCaleb, TWRS Director of Operations, will assume the position as General Manager in Yellowstone. Park operations will remain the same at this time with the exception of central reservations which will move to Denver.

An amendment to the TW Recreational Services (TWRS) contract was signed in 1995 which will result in an additional \$3.5 million for capital improvements at Canyon Village. This project will include removal and replacement of the main lodge boiler, asbestos removal, planning, and design and construction of new lodging. An equivalent number of substandard units will be removed from Canyon in conjunction with this building project.

1995 Capital Improvement Program accomplishments included proceeding with planning and design of a new Snow Lodge at Old Faithful, construction of a duplex at Mammoth, completion of a new sewer system at Roosevelt Lodge, historic renovation of the Roosevelt Lodge registration building, restoration and enclosure of a fire escape on the historic Mammoth Hotel, historic preservation work on the Old Faithful Inn and Lake Hotel, parkwide employee dormitory improvements, remodeling campground restrooms and campsites to meet ADA requirements and health/life-safety improvements in employee and guest facilities parkwide. In addition, Historic Structures Reports were finalized on the Old Faithful Lodge and Mammoth Hotel.

Hamilton Stores, Incorporated (HSI)

As required by contract, 1995 was a franchise fee reconsideration year. The HSI contract, written 25 years ago, states that fees may be increased if both parties agree. To date, HSI has not been responsive to the fee increase proposed by the National Park Service.

The NPS rescinded the Memorandum of Understanding (MOU) on the Sale of Souvenirs which was executed in 1979. This MOU stated that TWRS would not be allowed to sell Yellowstone souvenirs. HSI has notified the NPS that they intend to seek a legal settlement regarding this decision.

In response to park planning documents, the two existing gas stations at Old Faithful are to be replaced with one station. In addition, Environmental Protection Agency regulations require removal and replacement of underground fuel storage tanks by December 1998. The NPS notified HSI that a new station needs to be constructed under the terms of the YPSS Joint Venture Agreement at Old Faithful prior to 1998. HSI agreed to participate in construction of a station with certain stipulations; however, final agreements have not been reached. The Superintendent officially notified HSI that under the terms of their contract they have 60 days to respond as to whether or

not they will participate in construction of the station. The NPS will proceed with the construction project with another concessioner if HSI declines.

In 1995, HSI remodeled the Canyon General Store warehouse and the Old Faithful Upper Store fountain and gift shop, replaced the floor in the Canyon Photo Shop, and installed new lighting and remodeled the kitchen in the Canyon General Store. HSI converted the Mammoth Christmas Shop to the Yellowstone Nature Store in 1995. The merchandise in this store reflects the park theme and offers nature-related gifts. This line of merchandise was also carried in the Canyon General Store. Due to the success of this merchandise, HSI is planning to convert the Canyon Photo Shop to a nature store in 1996.

Yellowstone Park Service Stations (YPSS)

EPA regulations require that underground storage tanks meet EPA standards by December 1998 and that obsolete tanks be removed by that date. All tanks utilized by YPSS meet these requirements except those at Fishing Bridge and Old Faithful.

Parties to the YPSS Joint Venture Agreement have been notified regarding the preferred site and construction timetables for the Old Faithful Station.

The Superintendent notified the concessioners that replacement of the station at Fishing Bridge will be delayed through the term of the HSI contract; however, to meet the EPA requirements, the underground tanks at Fishing Bridge must be removed by 1998. It was agreed that the above ground tanks could be moved from the Old Faithful Lower Station for use at Fishing Bridge in the interim.

As required in the Lake/Fishing Bridge Development Concept Plan, employee housing will be removed from the Fishing Bridge area and YPSS will be required to construct employee housing in the Lake area.

Restrooms at the Tower and Canyon stations were remodeled for the 1995 operating season. The restrooms meet accessibility standards.

West Park Hospital, Yellowstone Park Medical Service (YPMS)

Dr. Mike Kimbro was hired in 1995 by the United States Public Health Service (USPHS) as the resident physician for the Mammoth Clinic. Public Health Service funding for this position is reviewed annually. The NPS and YPMS have been notified that this position may not be funded past the 1996 summer season. The medical contract requires that West Park Hospital fund this position if USPHS funding is not available.

not they will participate in construction of the station. The NPS will proceed with the construction project with another concessioner if HSI declines.

In 1995, HSI remodeled the Canyon General Store warehouse and the Old Faithful Upper Store fountain and gift shop, replaced the floor in the Canyon Photo Shop, and installed new lighting and remodeled the kitchen in the Canyon General Store. HSI converted the Mammoth Christmas Shop to the Yellowstone Nature Store in 1995. The merchandise in this store reflects the park theme and offers nature-related gifts. This line of merchandise was also carried in the Canyon General Store. Due to the success of this merchandise, HSI is planning to convert the Canyon Photo Shop to a nature store in 1996.

Yellowstone Park Service Stations (YPSS)

EPA regulations require that underground storage tanks meet EPA standards by December 1998 and that obsolete tanks be removed by that date. All tanks utilized by YPSS meet these requirements except those at Fishing Bridge and Old Faithful.

Parties to the YPSS Joint Venture Agreement have been notified regarding the preferred site and construction timetables for the Old Faithful Station.

The Superintendent notified the concessioners that replacement of the station at Fishing Bridge will be delayed through the term of the HSI contract; however, to meet the EPA requirements, the underground tanks at Fishing Bridge must be removed by 1998. It was agreed that the above ground tanks could be moved from the Old Faithful Lower Station for use at Fishing Bridge in the interim.

As required in the Lake/Fishing Bridge Development Concept Plan, employee housing will be removed from the Fishing Bridge area and YPSS will be required to construct employee housing in the Lake area.

Restrooms at the Tower and Canyon stations were remodeled for the 1995 operating season. The restrooms meet accessibility standards.

West Park Hospital, Yellowstone Park Medical Service (YPMS)

Dr. Mike Kimbro was hired in 1995 by the United States Public Health Service (USPHS) as the resident physician for the Mammoth Clinic. Public Health Service funding for this position is reviewed annually. The NPS and YPMS have been notified that this position may not be funded past the 1996 summer season. The medical contract requires that West Park Hospital fund this position if USPHS funding is not available.

YPMS funded the design of the Old Faithful Ranger Station/Clinic as a building program requirement in their contract. The building was completed this past fall and will be occupied by the clinic staff in May 1996. YPMS completed construction of a duplex for medical personnel in 1995 at Lake. Minor interior improvements were made in seasonal nurses and physicians quarters at Lake. The Lake Hospital and physician's quarters at Lake were reroofed. YPMS has initiated preliminary planning for construction of seasonal housing at Old Faithful.

INTERPRETATION

Chief of Interpretation (GS-14) - Ron Thoman
Asst. Chief, Operations (GS-12) - Tom Tankersley
Asst. Chief, Non-Personal Services/Media (GS-12) - Linda Young

BUDGET

In FY 95, the Division of Interpretation spent \$1,289,625 of the park's total budget. In addition to \$990,000 in ONPS funds and \$170,000 in fee enhancement funds, the division received fishing permit fee money (\$78,154), repair/rehab funds for Norris Trailside Exhibits (\$20,000), Federal Highways assistance funds (\$29,888), carry-over of FY 94 fee enhancement funds (\$1,583), and VIP funds (\$1,100).

During FY 95, the Yellowstone Association (YA) continued to play a major role in support of interpretive operations contributing \$173,617. Included in these funds were \$29,582 for interpretive operations support, \$15,000 for naturalist assistants at West Thumb, and \$129,035 in direct grants for such projects as exhibit production, publications, computers, VIP housing, and summer interns and SCAs. In addition, YA handled over \$80,000 for the division in restricted account expenditures resulting from donations and income to support *Expedition Yellowstone*, *iMAGiNE Yellowstone*, the *Yellowstone Today* visitor information newspaper, funds for computers, the Norris Ranger Museum, wolf interpretation, and volunteer housing and stipends.

The final piece of the FY 95 Interpretation budget included \$18,340 in reimbursements collected to fund the *Expedition: Yellowstone!* environmental education program through fees we began charging in the spring of 1995.

The total funds expended for Interpretation in FY 95 from all sources equaled \$1,559,404.

BRANCH OF OPERATIONS

PERSONNEL

In FY 95, the division had 23 full-time positions (18 permanent and 5 term) utilizing 20.48 of the total 36.79 FTE. The division had 49 seasonal positions (16.31 FTE) including 38 summer, 7 winter, 1 AV/media & planning, and 3 environmental education positions.

In addition to NPS staff, the Division of Interpretation benefitted from the services of 31 volunteers and 57 other positions including 44 YA sales clerks (working side-by-side with Ranger-Naturalists in the visitor centers), 7 SCAs, 1 Artists-in-Residence, 3 student interns, 1 Kodak employee, and one Media support position funded by the YA. These volunteers and YA employees, working directly in the

various interpretive functions of the park, constituted an additional 11.99 FTE--nearly three-quarters of the division's total seasonal FTE of 16.31.

TRAINING

Tom Tankersley coordinated the new employee seasonal training and the annual division-wide interpretive training which were held during the last two weeks of May. YA employees joined the group for the first day of division-wide training, and employees from other divisions and nearby federal/state agencies sat in on sessions during the second week. The training theme of "Back to Basics" was a continuation of the previous two years with an additional focus on "Interpreting Issues." Sessions focused on the basic foundation of interpretive principles and a special focus on the identification of Yellowstone's major issues as a primary component in the presentation of these stories.

During December, a 2-day training session was held for the staff focusing on winter issues and reinforcing basic skills. For a second year, TW Recreational Services snowcoach operators and snowmobile guides participated in this training as did Grand Teton NPS interpreters. Additionally, for a second year, the interpretive staff offered 2 2-day sessions to commercial snowcoach and snowmobile operators from West Yellowstone and Flagg Ranch.

Sandra Snell-Dobert and Skip Meehan attended the National Association of Interpreters annual conference in Cleveland in November, and Ellen Petrick-Underwood represented the park at a Project Wild/Wet Workshop in March, National Park and Public Land Ecosystems meeting in May, the 40-hour Orientation to the National Park Service course in May, and the Wyoming Interdisciplinary Conference in October. Rich Jehle attended the Montana Environmental Education Association annual meeting in March.

DISTRICT OPERATIONS

This was the second full year operating under the seven-district organizational structure initiated in 1993.

The 1994-95 winter program consisted of traditional services including: full operation of the Old Faithful and Mammoth Visitors Centers and warming huts at West Thumb, Fishing Bridge, Canyon, and Madison. Staff included the District Naturalists and 7 seasonals. The winter program for 1994-95 was of the same scope as the 1993-94 program, and staffing consisted of the District Naturalists, 1 permanent front-line naturalist, 7 seasonal naturalists, and 4 volunteers.

The division also implemented a new internship program. In order to maintain consistency in programming, the division created the positions of Naturalist Associate and Naturalist Assistant. All

volunteer staffing, regardless of funding or association, fall into one of these two positions. The Naturalist Associate works under the same position description as the GS-05 Ranger Naturalist offering the full scope of interpretive services. The Naturalist Assistant works under the same position description as the GS-04 Ranger Naturalist offering more informal interpretive services and providing task support to the District Naturalist. By design, SCAs are Naturalist Assistants and Interns are Naturalist Associates. VIPs might be either the Assistant or Associate depending upon interpretive qualifications and skills. The increase in staffing and the establishment of this program has been extremely successful. Both Assistants and Associates are uniformed in beige shirts and green pants (R&R Uniforms). The shirts are adorned with an NPS arrowhead with the 1930 Naturalist brassard embroidered inside. Whether at the visitor center desk or on the boardwalk, the Assistant and Associate carry the same degree of professionalism and authority as we expect from the Ranger Naturalist.

The 1995 summer program consisted of the following services: Mammoth Visitor Center, Norris Geyser Basin Museum, Old Faithful Visitor Center, Grant Village Visitor Center, Fishing Bridge Museum, and Canyon Visitor Center open daily from 8 a.m. until 7 p.m.; evening campfire programs offered nightly at Mammoth Campground Amphitheater, Norris Campground Campfire Circle, Madison Amphitheater, Old Faithful Visitor Center, Grant Village Amphitheater, Bridge Bay Amphitheater, Fishing Bridge Amphitheater, and Canyon Amphitheater; evening campfire programs were offered on an average of three nights per week at the Tower Amphitheater; and staffing limitations prevented offering any programs at Indian Creek Campfire Circle, Lewis Lake Campfire Circle, or the Pebble Creek Campfire Circle.

For the second season, the West Thumb Warming Hut was opened as a YA sales facility. Because of the need to increase staffing visibility at West Thumb, the YA funded two positions which worked side by side with the Ranger-Naturalists in the Grant District.

The Madison Museum was opened this year as the Madison Information Station with a YA sales facility. The south side of the building was established as an information station staffed with Naturalists, and the north side of the building was established as a YA sales facility staffed by YA personnel.

All areas offered programming similar to the previous year with a minimum of 2 2-hour guided walks daily; Old Faithful offered 4 2-hour guided walks daily. Again in 1995, because of staffing limitations, no half-day or full-day hikes were offered during the season. Roving interpretation was concentrated on those high-visitation, fragile resource areas where resource protection and visitor safety are of highest concern. The areas of concentration

included Mammoth Terraces; Norris Geyser Basin; Upper, Middle, and Lower Geyser Basins; West Thumb Geyser Basin; Fishing Bridge and Mud Volcano; and the Canyon Rims.

During the year, over 2,480,000 visitors were contacted through visitor centers and attended stations; over 316,000 visitors were contacted through roving interpretation; over 85,000 visitors participated in conducted walks and tours; and over 115,000 attended evening programs.

For a second season, we were able to maintain the unique opportunity of devoting one position to "wolf interpretation." This position was funded through donations raised by Rick McIntyre, author and 20+ year seasonal veteran of the National Park Service. Rick personally raised funds from private sources for this position. He served in a wolf interpretation capacity throughout the season and contacted nearly 40,000 visitors through roving interpretation, conducted walks, and evening programs. During the summer, Rick recorded over 3,400 visitors actually observing wolves in the Lamar Valley.

In 1993, the park's residential environmental education program became a fee program. The program operated the entire year as a fee based program with the three field positions being totally fee funded. The move to a fee based program has had little impact on schools that have previously been able to participate and has not proven to be a deterrent for new schools joining the program.

During the year, nearly 700 students participated in the 3- and 4-day programs resulting in approximately 27,000 student activity hours.

The Division of Interpretation assumed responsibility for coordinating special requested educational programs both in and out of the park. Ellen Petrick-Underwood took the lead in establishing the protocol for requested services and coordinated the program to ensure consistency in the level of services offered. Programs were offered to 60 school groups, 43 college and university groups, and 24 private associations and organizations. Seventeen programs were offered for the training and orientation of concession employees, 16 programs were offered at the Yellowstone Institute, and 40 programs were offered for a diversity of professional conferences, community organizations, museums, and charitable organizations. Through this program, over 8,000 people were contacted and offered a diversity of programs ranging from wolves (91 programs) to exotic plants (1 program). While the staffing for this service comes from all divisions, the vast majority of programs are presented by staff from the Division of Interpretation and the Yellowstone Center for Resources.

The Division of Interpretation is maintaining the re-established tradition of submitting Annual District Reports. These reports

reflect, in greater detail, the operations of each district during the fiscal year. These reports can be found in the Yellowstone archives.

OPERATIONS PERSONNEL ACTIONS

During the course of the year, the final stage of Ranger Careers resulted in Sub-District Naturalists Sandra Snell-Dobert, Roger Anderson, Carol Shively, and Matt Graves being promoted to GS-11. Ellen Petrick-Underwood, who assumed the Environmental Education Specialist as a GS-07 in 1994, was promoted to GS-09. Cathy Petrick transferred to Golden Gate National Recreation Area. In October, Rich Jehle was converted from a temporary position to a term appointment. In March, Carol Tepper was reinstated as a permanent GS-07/09 Park Ranger, and Tom Hougham, Bob Fuhrmann, and Jeanne Johnson were converted from temporary positions to term appointments.

BRANCH OF INTERPRETIVE PLANNING AND MEDIA

PERSONNEL

Ron Harvey retired from the Audiovisual Technician position in March. An emergency appointment was made to assure that the most essential duties of the position were performed; Diane Papineau was selected for that appointment. Later in the year, Jim Peaco absorbed many of the position's duties in addition to those of his regular position, and Dave Cowan and Skip Meehan provided substantial support for various special events, workshops, and seminars. The position was reengineered to focus efforts on the development of "advanced interpretive technologies" such as CD-ROMs, videography, the Internet, the World Wide Web, the KNPS TV channel, and the park's 1610 AM radio system. By the end of the calendar year, classification of the new position description had not yet occurred, and the drain on staff time to support basic operations in the AV cache at the expense of other critical projects had become a major problem. Complicating the situation was the request by Telecommunications to move the position into that Branch. Resolution of issues surrounding the position will likely take place sometime during 1996.

With another experiment in self-sustaining arts programs underway (see "National Parks Touring Artists Program"), Dave Cowan's duties evolved toward less time spent on arts program efforts and more involvement in "basic" branch projects. This position continued to function in the Visual Information Specialist series, GS-1084-09. Jim Peaco occupied the Park Photographer position, GS-1060-09. Ginny Cowan served as the Division's one permanent Publication Specialist (position classified in the Writer-Editor series GS-1082-09). Skip Meehan completed his first full year in Yellowstone in the Exhibit Specialist position (GS-1010-07/09). Diane Papineau began the year in a YA-funded position dealing with exhibit

projects and was later hired on a temporary appointment as a Media Specialist, GS-025-07. Due to serious back problems, she was assigned primarily exhibit projects versus continuing work in the audiovisual position.

Training opportunities continued to be limited for many reasons. Perhaps most significantly, the National Park Service's Employee Development Program is undergoing major changes. Until a new system is in place and functioning, training in most of the functions of interpretation is at a stand still. At the end of the year, Ginny Cowan attended a servicewide course, *Interpretive Design: Tools and Techniques for Park Produced Publications*, at Cuyahoga Valley NRA courtesy of an Albright-Wirth Employee Development grant. Linda Young, who served as one of the course planners, did not attend due to major last minute snafus with the Albright-Wirth travel vendor.

THE IMPACTS OF SHUTDOWNS

Two government shutdowns of historic proportions wreaked far greater havoc on projects than could have been forecast. The consequences of these shutdowns will ripple through 1996; already it is obvious that some projects will be dropped from the work schedule.

INTERPRETIVE MEDIA AND VISITOR USE

Interpretive media, also known as nonpersonal interpretive services, continued to provide critical orientation, information and interpretation to all park visitors plus a wide spectrum of the general public. The needs for nonpersonal interpretive services surpass the resources available to provide these services; however, branch staff successfully produced a wide array of new media as well as revised and upgraded existing media.

The following figures estimate the scope and effect of nonpersonal services in reaching Yellowstone's visiting public and the general public (the park newspaper, site bulletins, and Wayside Exhibits all reached somewhat over numbers listed below):

Park newspapers	1,000,000
Winter Snowmobile Guide to Yellowstone	35,000
Yellowstone Guide (pre-trip planning)	50,000
Self-guiding trail brochures	1,000,000
Discover Yellowstone	17,600
Dayhike Sampler	17,000
Site bulletins	300,000
Junior Ranger newspaper	11,200
Museum/Visitor Center exhibits	2,807,461
Wayside exhibits	2,900,000
Photographic services	1,500

Self-guiding trail brochures include the Upper Geyser Basin, Fountain Paint Pot, West Thumb Geyser Basin, Norris Geyser Basin, Canyon Area, Mammoth Hot Springs, and Mud Volcano. Site bulletins are free and include information on a wide range of natural and cultural resource subjects as well as critical/controversial issues and basic orientation, safety, and resource protection topics. Photographic services represent thousands of images processed and/or researched for various projects and needs.

INTERPRETIVE PLANNING

The new NPS Comprehensive Interpretive Planning process was distributed for review and comment. Pending final approval of the CIP process, the Division's major interpretive planning effort is being scheduled to coincide with this new process.

In general, efforts continue to support various nonpersonal interpretive service needs through alternative funding sources. The YA awarded special project grants for exhibit development and publication production (see those sections for details), and the former Rocky Mountain Regional Office awarded a Repair/Rehab grant as matching funds for an exhibit project funded by the YA. Grant proposals were submitted to the National Park Foundation, Challenge Cost Share, and the DOD Legacy Program. Decisions on these proposals had not been made by the end of the calendar year.

PUBLICATIONS

Four issues (spring, summer, autumn, winter) of the park newspaper, *Yellowstone Today*, were produced during the year. A special supplement to the summer park newspaper highlighting interpretive and educational opportunities in the Greater Yellowstone Area was produced in 1995. Foreign language translations of key park newspaper information were made and a four page "wrapper" was produced in German, French, and Spanish. This free "wrapper" is now the primary foreign language publication available to visitors; the park folder/maps are sold by the YA, with sales supporting future reprints of these publications. The Spanish park folder/map was available in the park in late autumn and thus was used very little during the main visitor season. This first series of foreign language publications will be complete when the Japanese "wrapper" is available during the 1996 season.

Significant revision of existing publications were made to upgrade appearance, enhance visitor use, and incorporate changing information. *Discover Yellowstone*, the magazine of ranger-naturalist activities and other interpretive/educational opportunities, was given a completely redesigned cover incorporating full color and heavier enameled paper. The price of this publication went from 50 to 75 cents per copy to support increased production costs. Approximately 17,600 magazines were printed for the 1995 summer season.

Seven self-guiding trail brochures (Upper Geyser Basin, Fountain Paint Pot, West Thumb Geyser Basin, Canyon Area, Mud Volcano, Norris Geyser Basin, Mammoth Hot Springs) were revised to varying degrees. Where possible, improved maps and graphics were incorporated. The parkwide *Dayhike Sampler* was revised to address trailhead access changes along park roads undergoing construction.

Twenty-four site bulletin-type publications were produced on a wide range of topics. These publications were distributed free of charge during 1995 but will become sales items in the future as we implement plans to make publications more fully self sustaining.

A full color retrospective catalog of the *iMAGiNE Yellowstone* student art exhibits neared completion by year's end (see "Artists-in-Residence" section).

EXHIBITS

New exhibits on Yellowstone's geothermal features, with special focus on Norris and the importance of geothermal features in Yellowstone's history, were installed at Norris Geyser Basin Museum and dedicated during the May YA board meeting. Exhibits for the museum's breezeway were redesigned to address problems of scale and proportion in the original plans produced by the exhibit design contractor; production is underway. By the end of the year, 22 trailside exhibits for Norris Geyser Basin had moved through the planning process and were in production at Winsor Porcelain Enamel and Hopewell Manufacturing. All of these new exhibits have been funded by a combination of YA and Rocky Mountain Region Repair/Rehab grants.

Eight new "trailhead" orientation exhibits for Mammoth Hot Springs Terraces' parking lots, trail junctions, and the Upper Terrace Drive were planned with production and installation taking place in 1996. These exhibits will provide consistent, easy to understand information for visitors to use in planning their time at the terraces. Additionally, problems of sign clutter and inconsistent design will be addressed by these exhibits. Funding for these exhibits was provided by a YA special project grant.

Thirty-five trailhead wayside exhibits moved from concept planning to the full planning stage. Each exhibit panel will feature a conventional map of the backcountry area associated with a particular trailhead, description of the area spanned by the trail, critical safety and resource protection information, and a "three dimensional" digital image model of each backcountry area intended to provide users with a quick visual understanding of the degree of hiking difficulty associated with a particular trail. Bulletin cases for changing/seasonal information accompany each orientation exhibit panel. A draft plan was mailed to Harpers Ferry Center in June in hopes that we might snag any funds available once reprogramming began; however, the amount of money available via

this process was much smaller than in previous years, and we were not successful in this endeavor. Late in the year, creating all of the digital image model maps was becoming a problem due to lack of sufficient resources locally to produce the maps. Efforts to locate other sources of assistance were underway at year's end.

Wolf reintroduction exhibits were developed for the hallway of the Administration building to provide employees with yet another means of learning about the process and keeping up with rapidly changing events in the early stages of reintroduction.

Bald eagle and lake trout exhibits were developed for Fishing Bridge Museum. Though no funding was specifically available for each, efforts are underway to integrate each exhibit into the existing fabric of the displays at Fishing Bridge. A sample display for the lake trout was created for the 1995 season.

In conjunction with the Curator, major assessments of exhibit needs at the Ranger Museum and Fishing Bridge Museum were made during the spring preseason facility checkups.

AUDIOVISUAL SERVICES

New amphitheater equipment, purchased the previous fiscal year, arrived and needed to be installed in the seven major amphitheaters. Additionally, several visitor center theaters had chronic problems with equipment and systems. Fortunately, Harpers Ferry Center was able to rearrange the schedules of its technical specialists in the Audiovisual Division and sent Frank Hatch to install the new equipment as well as troubleshoot various problems. During the two weeks Frank was here in May, he was able to substantially improve a variety of long standing situations and compiled a list of problems to tackle for the future.

An inventory of the AV cache of equipment was begun; many discrepancies involving property numbers were discovered. With demands for equipment set-ups for training, seminars, etc., it was not possible to fully resolve this problem.

AV equipment set-ups and videotaping services were provided for the following events in 1995: press conference for the historic first round of wolf reintroduction; the Superintendent's All Employees Meetings in January, June and September; the dedication of new exhibits at Norris Geyser Basin Museum; the World Heritage Committee's hearings on Yellowstone; the Thermophile Conference; the Yellowstone Center for Resource's Biennial Science Symposium; summer and winter seasonal interpretive training; law enforcement refresher training; various training events in the Maintenance and Administration Divisions; the annual Christmas Tree Lighting ceremony; and the farewell event for Jerry Mernin and Terry Danforth.

PHOTOGRAPHIC SERVICES

The historic reintroduction of wolves in Yellowstone consumed huge amounts of Park Photographer Jim Peaco's time for almost the entire first half of the year. In addition to the obvious need to be in many places capturing photographs for the event, he also assisted with remote camera installation at pen sites and in other ways, assisted with needs associated with the reintroduction. Once images began pouring in, he also had the principle responsibility of sorting, labelling, and organizing them to be used by interpreters, park staff in general, and the public. Late in the year, as planning began for the next phase of wolf reintroduction, the park photographer was once again a vital player in planning and providing photographic services.

Another major event requiring extensive photographic effort was the August 25 visit of President Bill Clinton and his family.

Throughout the last half of the year, Jim also assumed many of the AV Technician's functions with respect to equipment check-out, event set-up and videotaping.

All of this took place against the background of ongoing operations in the Photography Office. Demands for images from Interpretation staff grew several fold with the number of media projects underway and with the number of new personal services seasonal staff. Assistance in the office is desperately needed to keep up with demand, and a variety of options were being considered by the end of the year.

ARTIST-IN-RESIDENCE PROGRAM /IMAGINE YELLOWSTONE

Division Chief Ron Thoman decided that the future of any arts program in Yellowstone hinges on its ability to be completely self-sustaining. Dwindling resources simply do not allow us to pursue efforts that are not somehow basic to providing orientation, information, and interpretation to the widest audience of Yellowstone's visitors and the general public. This decision led to major changes in how and what was offered in Yellowstone under the umbrella term "Arts Programs" during 1995.

Sidney Wildesmith, an artist based out of Santa Fe, New Mexico, approached Yellowstone with the concept of creating a National Touring Artists-in-Parks Program that would offer a variety of activities and experiences to visitors at no cost to participating parks. Yellowstone agreed to be one of the pilot parks for the program and entered into a formal MOA with Sidney for a summer NTAP program based out of the Canyon Visitor Center. Sidney provided his own housing in the form of a motorhome and rented space in which to park the vehicle at the Canyon employee housing area. He offered art courses of varying lengths for a sliding scale of fees and also used part of the Canyon VC auditorium as exhibit space in

which to display the results of his activities. Additionally, Sidney agreed to create an original work on Yellowstone to be printed in poster format and sold with proceeds of sales to return to Yellowstone to support art education efforts.

An *Imagine Yellowstone* student art exhibit with an "endangered species" theme was developed for Canyon Visitor Center's exhibit space for the 1995 season. Once again, Dave Cowan created a display of selected student art that provided visitors with provocation and interpretation on a topic with timely connections to several natural history events in Yellowstone. Dave also continued work on a full color retrospective art catalog of the entire *Imagine Yellowstone* program. This catalog will be sold during 1996 with proceeds supporting art and education programs in Yellowstone.

YELLOWSTONE ASSOCIATION/YELLOWSTONE INSTITUTE

Since its establishment in 1933, the Yellowstone Association has helped support the park's interpretive and educational programs. In FY 95, the Association provided \$631,000 in aid to Yellowstone National Park, supplementing funding for the Division of Interpretation, providing free publications to park visitors, and providing information assistance at park visitor centers.

The Association funded an interpretive newspaper supplement, distributed to over 2.5 million visitors, which highlighted interpretive facilities and services. Once again, the Association funded printing of *Yellowstone Science*. In addition, the Association funded developmental costs for new wayside exhibits for the Mammoth Terraces, six intern positions and six Student Conservation Association positions, and housing for park volunteers. On a longer-term basis, the Association continued to fund a \$300,000, three-year project to upgrade the Lamar Valley facility used jointly by the Yellowstone Institute field school program and Yellowstone's residential environmental education program for school children, *Expedition: Yellowstone!*. For the second year, YA covered an additional portion of the cost of the park newspaper in order for the Division of Interpretation to hire two additional ranger-naturalists in the Grant Village District. These positions provided a uniformed presence in addition to the YA staff at the West Thumb Geyser Basin Bookstore.

After undertaking the remodeling of the former restroom building, the YA opened a new bookstore at the Norris Geyser Basin; this brought to an end the many years of book sales being conducted from the Norris Geyser Basin Museum breezeway.

At the September 1995 board meeting, the YA and NPS entered into a strategic planning process aimed at providing YA with target NPS areas on which to focus future funding.

The Yellowstone Institute offered 80 classes attended by hundreds of participants including over 30 NPS employees who attended classes tuition-free.

MAINTENANCE

Tim A. Hudson (GM-14) - Chief of Maintenance

Jack E. Roberts (GS-13/4) - Assistant Chief of Maintenance

GENERAL

The Maintenance Division's workload in 1995 again focused on the park's major infrastructure problems--roads, utility systems, buildings, and housing. Work with removal of old hazardous materials and underground storage tanks is demanding more time and focus, and the residue of 100 plus years of visitors and activity still needs much work. Compliance requirements such as ADA, hazardous materials abatements, and NFPA requirements affect park operations and budget priorities. The lack of a viable cyclic maintenance program is still increasingly evident, especially in roads. Even though Craig Pass is complete, and the East Entrance and west side road projects are underway, the estimate to bring the roads up to standard is still approximately \$300 million. Aside from major failures, little or no preventative maintenance occurs.

A recycling program continues in conjunction with our park concessioners, Hamilton Stores and TW Services. Drop-off points for glass and aluminum exist in housing areas throughout the park and drop-off points for aluminum exist in many of the campgrounds. The park has been actively working to reduce the amount of material going to landfills and incinerators and initiated a co-composting initiative with the counties in southwest Montana. A Department of Energy grant was received by the state of Montana for a feasibility study which should be accomplished in 1996.

The Division was very active with the Department of Energy and received an alternate energy vehicle in 1995 that runs on 100 percent biodiesel.

FISCAL OPERATIONS

The Maintenance Division operated from a number of fund sources:

ONPS	7,589,000
FEE	1,548,791
Repair/Rehab/Cyclic	1,740,100
Day Labor (404)	143,083
Dept. of Energy (454)	243,729
FLHP (day labor only) (595)	559,700
School Maint. (610)	114,400
Housing Initiative (408)	1,031,608

Total FTEs for FY95 - 219.29

Maintenance FTE ceiling - 218

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

Dept./Agency

Phone #

307-242-2425

307-344-2005

5099 101

GENERAL SERVICES ADMINISTRATION

BUILDINGS AND UTILITIES

Underground storage tank replacement continued. The major project for this year was the completion of the Mammoth fueling station at the new garage. A new oil building was also constructed (the old building was demolished and the tanks were removed from the parking lot area next to the Safety Office). Other UST replacements included the Mammoth Clinic generator, residence 101, Grant Village residential area, the wash house in the Mammoth trailer court, and the Mammoth Chapel.

More specialized rehab/construction projects included the rehab of the Norris Geyser Basin Museum and rewiring for new exhibits, the installation of new carpet and offices in the Mammoth Visitor Center, the installation of handicapped restrooms in the Mammoth Administration building, the installation of handicapped restrooms at the Mammoth School, rewiring of the Northeast Entrance station, and heating and ventilation work at the East and West Entrances.

Utility projects included major repairs at sewage lift stations at the Old Faithful Inn, the Madison Campground picnic area, the Grant Village Campground, Tower Falls comfort station, water pumps at Tower Junction, and the Canyon Chittenden Bridge intake. Corroding water pipes at Tower Fall and the Old Faithful lower store area continue to require major repairs.

Department of Energy grant-funded projects continued; major work included the propane generator installation at Lamar, the insulation, heat and light work at the Grant Ranger Station, the insulation, heat and light work at the Madison Maintenance Shop, heating repairs at Mammoth, and insulation, heat and light work at the Canyon Visitor Center.

Housing initiative funds continued the construction of the East Entrance four-plex. The first four-plex unit was finished and the second unit foundation begun; transahomes and a trailer were removed.

A new six-plex apartment at Old Faithful was bid and Criterion of Billings, Montana, was awarded the contract; work began in June. The work was not completed this season but is expected to be complete for the 1996 summer season.

The interior offices at the Emergency Services Building at Old Faithful were constructed this year. This also included work on the bathrooms as well as the sprinkler and heating systems.

Major housing and building rehabilitation work included the gutting, rewiring, reinsulating, and total rehabilitation of the Superintendent's house (Building 3), reconstructing offices in another portion of the old garage/new fire cache (Building 23), and moving and reconstruction of the Three Rivers/Crystal Springs.

Re-roofing projects included the replacement of the snow damaged trailer structures at Lewis Lake Campground.

ROADS

The Norris Hot Mix Plant manufactured 1,410 cubic yards of MC-800 asphalt, 4,609 cubic yards of AC-10, and 1,000 cubic yards of SC-250.

A striping contract was awarded to Mark-Rite Lines of Billings, Montana. Roads and parking areas that were striped included Tower Junction to Canyon, Northeast Entrance to Tower Junction, Mammoth Terraces to Swan Lake, Old Faithful to West Thumb, West Thumb to South Entrance, Mammoth to Tower Junction, Old Faithful area roads, Grant Village area roads, and Mud Volcano parking lot.

Fourteen miles of the Grand Loop Road from Mammoth to Tower Junction received a chip seal coat. During the chip seal process (approx. 8 a.m. to 5 p.m. for 3 days), the road was closed to public and administrative travel. Chip retention was good and no tort claims were filed. The remainder of the road was overlaid with 2,780 cubic yards of AC-10 asphalt.

Special Projects crews removed used asphalt from the Chittenden Road, patched potholes throughout the park (145 cubic yards), levelled the corral at Old Faithful, cleaned culverts and ditches from Mammoth to Gardiner, dug out a fuel spill at the Norris Hot Mix Plant and constructed a storage facility for crushed glass (used in the manufacture of glasphalt). In conjunction with the Bureau of Land Management, a crew installed a vault toilet at the Carbella Recreation site on the Yellowstone River. A road was re-constructed to the Lake wastewater treatment plant. The road and berm of the Old Faithful wastewater holding pond were both reconstructed. Three cabins were removed from the Yellowstone Institute facility at the Lamar Buffalo Ranch and a new road constructed.

The crusher plant processed 2,210 cubic yards of used asphalt at the Arnica Creek Pit. At the Norris Hot Mix Plant, 1,360 cubic yards of contaminated soil was screened, crushed, and tested for hydrocarbons.

All motor vehicle operators attended a special Advanced Defensive Driving Course offered by the Montana Office of Public Instruction.

In September, the Special Projects crew began screening, crushing, and drying contaminated soil stockpiled at the Norris Plant. Approximately 1,800 cubic yards of contaminated soil from the Mammoth Fuel Pump site were stockpiled at the Norris plant.

FEDERAL LANDS HIGHWAY PROGRAM

Work on the first phase of the East Entrance road project from Lake Butte to Sylvan Pass continued. The contractor, Washington Construction from Missoula, Montana, fell behind schedule and failed to complete the project. Traffic problems were greatly improved from the previous 1994 construction season.

The first segment of reconstruction of the Old Faithful to Madison section from Biscuit Basin to Fountain Paint Pots and the 3R section from Madison Junction to the exit of the Firehole Canyon Drive was in full operation in 1995. The contractor, Burgraff Construction from Idaho Falls, Idaho, maintained an effective operation that minimized impacts to traffic flow and kept the project ahead of schedule. The majority of the paving was completed during this season.

The second phase of the East Entrance road from Lake Butte to Mary Bay was awarded for \$9,327,502.28 to Stimpel Wiebelhaus Associates, of Redding, California. No work on this segment was accomplished this season.

The Federal Lands Highway Program is supervised by the Federal Highway Administration from Vancouver, Washington. Construction and design of these projects are their primary responsibilities with landscape construction oversight and design provided by the Maintenance Division landscape architects. Further design efforts in 1995 concentrated on the second phase of the Madison to Old Faithful section, the 3R project on the Northeast Entrance Road, and preliminary design on the Madison to Norris section.

FRONTCOUNTRY TRAILS

Major frontcountry trails projects included reconstructing 860 linear feet of boardwalk in the Grand Geyser/Sawmill Geyser/Giant Geyser area of the Old Faithful Basin area; 526 linear feet in the Mammoth Terrace area; 1164 linear feet in the West Thumb Geyser Basin; 508 linear feet of boardwalk for a handicapped fishing access at the Mount Haynes pullout on the West Entrance road; and 50 linear feet at the Norris Geyser Basin. This crew supported the landscape architect's revegetation program, FLHP signpost construction and installation, and the wolf recovery pen construction program.

BACKCOUNTRY TRAILS

Following are the accomplishments and major areas of work for this year in backcountry trail work performed by NPS trail crews.

- 140 miles of tread maintained
- 286 linear feet of turnpike constructed
- 6,335 linear feet of tread reconstructed

- 200 linear feet of bridges reconstructed
- 925 hours of constructing drainage structures
- 1,017 square feet of retaining wall constructed
- 1,843 hours of general trail maintenance (clearing trails, brushing, cleaning water bars)

Major areas worked: Due to the late snowmelt this year, much work was concentrated on frontcountry projects, notably Tower Fall, Boiling River, other Mammoth area trails, Solitary Geyser, the Long Trail (brink of Lower Falls), and the Howard Eaton at Old Faithful.

North District:	Yellowstone River Miller Creek Bliss Pass Sportsman Lake Trail
-----------------	---

Lake District	Broad Creek Pelican Spring Eagle Pass
---------------	---

Snake District	South Boundary Snake River Cutoff Heart River Outlet Creek Heart Lake Lynx Creek
----------------	---

West District	Artist Paint Pots Mystic Falls Daley Creek Fan Creek Bechler Meadow
---------------	---

LANDSCAPE ARCHITECTURE

Design Projects

The Landscape Architecture staff assisted in color selections for the Old Faithful Ranger Station/Clinic and in siting of the proposed 4-plex housing units at West and Lake.

Design proposals were made for restoring the historic sidewalk and stairs at the Lower Hamilton Store. An accessible ramp with stone facade was included in the plans.

The staff continued to work with the Concessions Office on design elements of various projects.

Design Standards

Design Standards for the park are being developed by the Landscape staff under the direction of the Supervisory Landscape Architect.

The goal is to develop guidelines for design, construction, and maintenance that YNP staff, DSC/SSO staff, concessioner, and contractors can utilize. Field presentations were made to the Lake area staff with additional area presentations scheduled. The document will have value beyond Yellowstone Park and may be for sale to the public. The 400-page document includes developed areas, historic photos, sketches, and text. It should be on review in 1996.

Revegetation

Construction was monitored and topsoil reclaimed on the Roosevelt Sewer Treatment field and on the US WEST modernization project at Madison. New underground utility lines were reclaimed on the Lamar Cabin project.

Federal Highways Road Projects

Parkwide Road Project Landscape Coordination

The Supervisory Landscape Architect provided parkwide landscape representation on the Road Team with involvement in planning, design, construction, and in preparation of overall project coordination. This included involvement on landscape decisions and direction with RMR, DSC, and FHWA personnel.

Six divisions, thirty people and three interagency agreements were involved in budget requests for participation in sixteen different segments of road projects (overlay and 3-R). The \$3 million budget was coordinated and evaluated by the Supervisory Landscape Architect and sent to WASO for approval.

East Entrance Reconstruction

The second session of work on Lake Butte Overlook to Sylvan Pass was completed with a member of the landscape architect's staff on-site to minimize resource impact, protect natural and historical landscapes, monitor construction, guide the installation of landscape elements, and coordinate revegetation of the road corridor. Major mud flows required resource monitoring. Rock armoring and landscape boulders were placed. Two hundred and ninety-four rooted willow and birch shrubs were planted on the slopes to help stabilize them. Approximately 40 trees, salvaged and stored in an on-site nursery, were transplanted to the project. In all, 1.5 weeks were spent planting these materials and additional plants directly from the surrounding area. Additional seeding took place on the project.

Madison to Biscuit Basin Reconstruction

Construction on segment 254D segment 1 started in the fall of 1994 and continued through the fall of 1995. The on-site park landscape

architect gave topsoil orientations before topsoil was removed. The landscape architect monitored construction to minimize resource impacts and to protect the natural and cultural landscapes. Rock masonry work was completed for the Flood Geyser, Midway and Paint Pots areas. The road was successfully realigned above Flood Geyser. Approximately 20 species of seed were spread throughout the road project, and plant materials were transplanted by hand and tree spade. A few key signs were placed before winter.

Seed Collection

Seed was collected on the East Entrance road, Tower to Northeast, Madison to Norris, and Madison to Biscuit Basin areas for future road construction projects. The seed was dried, bagged, and sent to Bridger Plant Materials Center for cleaning and further production as part of the parkwide seed bank process. One hundred and sixty-nine collections were made resulting in 76.5 pounds of cleaned seed. Eighteen seed accessions were selected to put into further filed production.

Stevens Creek Nursery

Plant material was salvaged from the next East and Madison road projects. Salvaged plant material was transplanted back to the first phases of the East Entrance and Madison road projects. This method has worked well for the road projects.

Sign Program

The Sign Shop handled 320 requests for a total of 658 signs which left the shop. This total includes wood routed, aluminum baked and ready-made aluminum signs.

Rustic double arm sign posts were constructed and installed at all entrances and junctions to display road construction information and road conditions. A total of 24 double arm and 6 single arm sign installations were erected to display 45 different messages.

Signs along Northeast and Madison to Biscuit (segment B) road projects were evaluated. An extensive sign plan was developed for the Madison project to include signs to be removed and stockpiled, removed and replaced, final installation, and new construction. New signs were constructed for final installation on the first phase of Madison to Old Faithful.

DISTRICT OPERATIONS

North District and Tower

1. Repaired or replaced most signs in the Mammoth area. (Staining, replacing posts, new sign faces, inserted 3/4" plywood backing for stability.)

2. Overlay of the sunken fill area (above Africa Lake.) Grader patched two lifts with 170 yards of MC-800.
3. Pothole patching North Entrance to Norris and Mammoth to Northeast Entrance (60% of the road crews available season was spent on this work.)
4. Replacement of deteriorated bumper logs with boulders.
5. Road shoulder maintenance Mammoth to Norris (restoring ditchlines to assure proper drainage away from the road.)

Mammoth Janitorial and Grounds

1. Campground site rehabilitation (installed posts or rocks to delineate sites, installed "new" fire rings, and refinished tables).
2. Significant repairs to the irrigation system and turf in upper and middle Mammoth (both had been damaged during repairs to the heating systems).
3. Rehabilitated two sections of trail in the Mammoth Terrace area (removed deteriorated asphalt and installed new asphalt).

Northeast Maintenance

1. Continued work on drainage in the Twin Lakes area.
2. Overlaid Gardiner Lake area.

Canyon and Norris Maintenance

1. Installed two new vault toilets at the Norris Geyser Basin parking area.
2. Completed sign replacement program (approximately 50 signs were replaced).
3. Trail improvements along the rim.
4. Rehabilitation and organization of building #800.
5. Repairs to the Canyon potable water distribution system.

Lake Maintenance

1. Relocated and rehabilitated a log restroom structure from Fishing Bridge Campground for use beside the Lake Hamilton Store.
2. Relocated a log structure to behind the Lake Hamilton Store, utilized for storage.

3. Constructed two portable winter restrooms utilized at the Fishing Bridge Warming Hut.

4. Constructed mudrooms on the rear of building #711.

5. Reconditioned and stained picnic tables throughout the area.

Grant Maintenance

1. Extensive rehabilitation of the West Thumb Geyser Basin area. Constructed new trails, rehabilitated abandoned trails, hauled in top soil, and planted native grass seed and young trees.

2. West Thumb Warming Hut; accessibility issues were addressed (ramp, doors, etc.).

3. Roof replacement; Grant picnic area restroom roof changed from tar and stone to a 6/12 pitched truss with metal.

4. Installed new water valve access boxes on the primary potable water distribution system.

5. Rehabilitated a primary intersection on a secondary road. Area properly graded for drainage and compaction. MC-800 asphalt was utilized to top it off.

Old Faithful Maintenance

1. Installed five curb cuts for improved accessibility.

2. Hazard tree removal (incidental).

3. Cleaned four evaporation ponds at the wastewater facility.

4. Installed several control valves on the potable water distribution system.

5. Repaired the interior of and painted a visitor area restroom.

FLEET MAINTENANCE

1. New vehicles and equipment purchased:

30 snowmobiles	\$ 146,257
14 light vehicles	154,000
9 heavy equipment	1,062,000
Total	\$1,362,257

2. Excess Equipment, Light Vehicles and Heavy Equipment Program:

a. Equipment - crack sealer, air compressor, trailer, road broom, snow plow, sander, office furniture. Yellowstone acquired for the

Park Service 7 lots valued at \$39,827.00

b. Light Vehicles - sedans, pickups, flatbeds, etc. Yellowstone acquired for the Park Service 29 light vehicles valued at \$204,059.00

c. Heavy Equipment - forklift, equipment trailer, fuel truck, truck tractor. Yellowstone acquired for the Park Service 13 pieces of heavy equipment valued at \$318,504.00

The value figured listed is the actual cost when purchased new. The adjusted value would be substantially less.

3. Alternative Fuel Project: "Truck in the Park":

- cooperative effort between several organizations.
- 25,000 miles were logged on the biodiesel truck utilizing 100% rapeseed oil with ethyl esters.
- participated in regional demonstration displays.
- in depth reports looking at the pollutants released after combustion are very positive.

4. Snowmobile/Bio-Synthetic 2 Cycle Motor Oil Project:

- cooperative effort between several organizations.
- first phase of the demonstration project was conducted during winter of 1995/1996.
- Conoco oil was utilized during this phase.
- initial analysis of our repair records showed that Yellowstone snowmobiles experienced less failures from fouled plugs and burnt pistons/cylinders than in previous years.

5. Continued, through phasing, to complete the south end of the Fleet Maintenance Facility.

PUBLIC AFFAIRS OFFICE

PERSONNEL

Chief of Public Affairs (GS-12, PFT) - Marsha Karle
Asst. Chief of Public Affairs (GS-11, PFT) - Cheryl Matthews
Public Affairs Specialist (GS-07, STF) - Elizabeth Kirkpatrick
Administrative Assistant (GS-06, PFT) - Stacy Churchwell

In addition to the regular staff, the Public Affairs Office had two volunteers; Steve Mazur (Madison Ranger) volunteered April through May, and Devon Finley began in December and worked through January 1996.

BUDGET

The ONPS base for Public Affairs in FY 95 was \$170,000 in addition to \$16,275 received in film permit application and monitoring fees. This money was used to pay a portion of Elizabeth Murray's salary in addition to the salaries of other park staff who assisted filmers and photographers with projects in the park.

GENERAL INFORMATION SERVICES

The Public Affairs Office served as a clearinghouse of information for the park, the public, as well as for local, national, and international organizations and Congressional offices. The office also responded daily to written, telephone, and walk-in requests for assistance and information.

In addition to numerous responses to a variety of information requests, the Public Affairs Office responded to 11 Freedom of Information requests this past year.

The Public Affairs Office worked closely with the Regional and Washington Public Affairs Offices keeping them informed on a variety of matters. Major news items involving Yellowstone included the federal government impasse, wolf reintroduction, bison/brucellosis, visitor use management (winter and summer), road reconstruction, grizzly bears, poaching, New World Mine, Yellowstone as a World Heritage Site in Danger, President Clinton's visit, and housing.

NEWS RELEASES

There were 72 press releases, 13 emergency news call-outs, and 7 media advisories issued in 1995.

PHOTO/SLIDE REQUESTS

The Public Affairs Office answered over 140 requests for loans of slides and photographs on Yellowstone subjects and over 110

requests for slides and photographs of wolves. These requests came from the general public, educational institutions, and the media. Approximately 1,200 slides and photographs on Yellowstone subjects and 3,000 slides and photographs of wolves were mailed out in response to these requests.

The Public Affairs Office continues to do the film processing for other divisions in the park; approximately 200 orders were processed.

PUBLICATION EDITING REQUESTS

The Public Affairs Office responded to more than 250 written and phone requests for editing publications about Yellowstone. These requests were often time consuming requiring extensive research in order to provide accurate information for major national and international publications.

FILMING PERMITS

Seventy-four filming and photography permits were issued in 1995 ranging from nature film documentaries to product commercials. Additionally, the Public Affairs Office assisted numerous other film companies and freelancers throughout the year which often required extensive work-up and scheduling.

MEDIA CONTACTS

With the reintroduction of the first group of wolves to Yellowstone in January came an influx of media and public interest. A media center was set up for the event to provide information, updates, and a work center for media to file stories and dub footage. Approximately 150 media (local, regional, national, and international) were in Yellowstone for the event including NBC, CBS, ABC, and CNN.

The Public Affairs Office responded daily to numerous requests for information and interviews from local, regional, national, and international news media. In addition to the numerous media contacts made during the arrival of the first wolves to Yellowstone, the Public Affairs Office conducted interviews with approximately 85 television stations, 65 radio stations, and 90 print media. Additionally, interviews with foreign news media were conducted with approximately 10 television stations, 5 radio stations, and 15 print media.

CONGRESSIONAL/OFFICIAL AND OTHER VISITORS

Throughout the year, the Public Affairs Office assisted with programming and arrangements for United States government dignitaries, park officials, and other guests. A sampling of these visitors follows:

Bruce Babbitt, Secretary of the Interior, and Mollie Beattie, Director of the U.S. Fish and Wildlife Service, visited in January for the arrival of the first group of wolves to Yellowstone. Both assisted in bringing the wolves in to the acclimation pens and gave speeches at the press conference.

Lois Schiffer, Assistant Attorney General, visited in May. Her focus was on environmental issues in the park. During her visit, she travelled to Lamar Valley to look for wolves and grizzlies and to West Yellowstone to view bison being herded back into the park. She also met with Mike Finley, John Varley, Dan Sholly, and Mary Hektner on park issues.

Major Michael Phillips with the U.S. Airforce Pentagon brought a group of Israeli VIPs to the park.

President Clinton and the First Family visited the Old Faithful, Canyon, and Lamar Valley areas of the park on August 25, 1996.

OFFICIAL VISITORS/COUNTRIES

The Public Affairs Office assisted with visits by many foreign dignitaries and organizations including government officials and park managers. Forty-five organizations were represented from 35 different countries. Additionally, a group of 29 Environmental Education Leaders visited representing 26 countries.

The chairman (Thailand) and three representatives (Germany, South Africa, and France) of the World Heritage Committee visited the park in September to learn more about the proposed New World Mine and its possible impacts on the park, a World Heritage Site since 1978. Presentations were made by Crown Butte Mines, Inc., various conservation groups, lead agencies developing the Environmental Impact Statement (the U.S. Forest Service and the state of Montana), and the National Park Service. As a result of these meetings and a look at other threats to the park, Yellowstone was declared a "World Heritage Site in Danger" in December.

MEETINGS/TRAINING

- *Cody Task Force - April
- *Montana Governor's Conference on Tourism - April
- *GYCC - April
- *Mammoth Housing Needs Open House - May
- *Structural Fire - May
- *Gallatin County Land Use Planning - May
- *Leadership and Supervisory Skills - May
- *Visitor Use Management - May, August
- *Freedom of Information Act (Cheryl) - May
- *Strategic Planning - June
- *Grizzly Bear Conservation Strategy - June
- *Conservation Strategy - July

- *Microsoft Windows (Stacy) - August
- *125th Anniversary Planning - September, October
- *Northern Rockies Cineposium - October

SPECIAL EVENTS

- *National Parks Week - dedication of the new exhibits at Norris Geyser Basin - May
- *Christmas Tree Lighting Ceremony and Open House - December

RESOURCE MANAGEMENT OPERATIONS AND VISITOR PROTECTION

Chief Ranger (GM-14) - Dan R. Sholly
 Asst. Chief Ranger (GS-13/4) - Michael B. Murray

<u>BUDGET</u>	<u>FY95</u>
ONPS	\$4,450,000
Fee Collection	565,000
Fishing Fees	<u>225,000</u>
TOTAL	\$5,240,000

<u>PERSONNEL</u>	<u>FY95</u>
FTEs	142
# Permanent employees	85
# Seasonal employees	175
# YCC enrollees	<u>30</u>
TOTAL # employees	290

Retirements

1. Gerald E. Mernin, Snake River District Ranger
2. Richard T. Danforth, Emergency Services Supervisor

Resignations

1. Jason Jarrett, from Park Ranger, Gallatin Sub-District to Deputy Sheriff, Gallatin County (MT) Sheriff's Office

Transfers out of RMO&VP

1. Rob Danno, Sub-District Ranger, Madison, to Chief Ranger, Chiricahua NM
2. Bob Love, Sub-District Ranger, Canyon, to West District Ranger, Rocky Mountain National Park

In-Park Reassignments

1. Scott Bentley, seasonal ranger, to park ranger at Old Faithful
2. Jon Edwards, park ranger VSO, to park ranger, Mammoth
3. Tara Ross, South District Clerk, to Park Ranger, Grant Village
4. Wendy Ross, seasonal, to park ranger (fee collection), West Entrance

PARK VISITATION

A service-wide change in the statistical program used to calculate park visitation was implemented in January 1993. For Yellowstone, this resulted in different person per vehicle ratios (PPVs) being used, and travel statistics for U.S. Highway 191 were included in the total count for the first time. This resulted in an apparent increase in total recreational and non-recreational visitation.

<u>Visitor Entry by Entrance Station</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
West	966,348	994,403	1,090,477
South	801,432	863,442	868,845
North	534,888	593,059	599,611
East	476,189	413,537	356,857
Northeast	162,970	201,830	227,866
SUB-TOTAL	2,941,830	3,066,276	3,143,655
U.S. Highway 191	892,765	959,666	958,252
TOTAL	3,834,595	4,025,942	4,101,907

FEE COLLECTION (FY95)

<u>Entrance Stations</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
West	\$1,401,106	\$1,602,381	\$1,656,344
South	85,627	226,022	174,323
North	554,000	593,059	740,109
East	909,874	413,537	787,160
Northeast	210,069	201,830	362,885
Commercial Bussing			204,000
ATM Charges			2,480
SUB-TOTAL ENTRANCE STATIONS	\$3,160,676	\$3,798,412	\$3,927,301

Other fees

*Campground fees collected	\$1,085,825	\$370,583	\$404,918
Boating SUP fees collected	30,490	34,625	32,360
Fishing SUP fees collected	n/a	392,267	433,274

<u>TOTAL FEES COLLECTED</u>	\$4,276,991	\$4,354,997	\$4,797,854
-----------------------------	-------------	-------------	-------------

*Note: In 1994, responsibility for managing the Bridge Bay, Canyon, Grant Village, and Madison Campgrounds was transferred from the Park Service to TW Recreational Services, a park concessioner. This accounts for the dramatic decrease in campground fees collected in 1994 and 1995 compared to 1993.

VISITOR SERVICES OFFICE (VSO)

<u>Permits Issued</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Golden Eagle Passports	9,907	12,622	13,126
Golden Age Passports	unknown	13,074	13,799
Golden Access Passports	675	750	800
Annual Park Passes	13,155	17,183	17,190
Boat Permits: motorized	1,361	1,543	1,204
non-motorized	1,872	2,076	1,917
Fishing Permits*	161,058	77,091	75,071
Other Special Use Permits	129	147	180
Park Supplier Permits	223	760	825
Employee Vehicle Permits	3,870	3,900	3,900
Fee Waivers	221	297	340
Commercial Use Licenses	155	153	132

* There was no charge for fishing permits prior to 1994.

<u>Lost and Found</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Found items	3,186	3,023	3,612
Lost items reported	1,800	1,900	1,950
Items returned to owner	686	730	851
Items returned to finder	530	340	284

<u>Visitor Information</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Information calls	17,453	21,360	25,640
Information responses mailed out	6,500	5,258	6,114

The Visitor Services Office staff inventoried and distributed 35 different park publications such as maps, newspapers, bison and bear warnings, backcountry brochures, boating permits to 11 campgrounds, 5 entrance stations, and 7 visitor centers. Over 30 tons of brochures, maps, and newspapers were delivered by the office staff through the course of the summer. The office supervisor, with the help of the Communications Center and Interpretive staff, coordinated and produced park informational mail-out packages.

<u>COMMUNICATIONS CENTER</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Identification Notices	187	249	201
Number located	33	39	31
Percent located	17.6%	16.7%	15.4%
Criminal History Checks*	1,873	2,012	1,293
* No. Individuals Run	479	513	509
Other Law Enforcement Checks	9,617	61,916	59,802
Vehicle Checks	9,811	12,401	11,499
Persons	6,758	8,851	9,166
Locals	2,808	15,531	17,287

NCIC Inquiries	20,240	25,131	21,850
NCIC Entries	7	4	4
APBs	39	38	36
ATLs	19	14	28
Wrecker Requests	184	212	193
Incoming Calls	201,472	189,431	234,202
Call taken by *CINDI	122,414	125,020	165,398
Percent of call taken by CINDI	60.7%	66%	60.8%
Information Packets Mailed	30,434	28,053	28,076
Regular	28,563	26,419	26,363
Foreign	1,871	1,634	1,713

VISITOR PROTECTION

	<u>1993</u>	<u>1994</u>	<u>1995</u>
Employee certifications			
Permanent commissioned rangers	50	54	53
Seasonal commissioned rangers	54	66	66
Deputy USF&W Agents	29	29	29
County Deputy Sheriff	34	24	40
Deputy U.S. Marshal	1	1	1
SCUBA certified	2	4	3
Firearms Rangemaster	27	28	20

<u>Law Enforcement</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Case Incidents Reports	4,238	5,375	5,165
Motor Vehicle Accidents	505	603	594
Part I Offenses	152	155	137
Part II Offenses	3,979	4,155	3,666
Car Clouts	52	65	26
Verbal Warnings	17,720	22,454	21,282
Violation Notices Issued	2,836	3,279	3,216
Arrests	92	150	89
Court Cases (heard in Yellowstone)	182	274	218

<u>Resource Protection</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
* = no. Violation Notices issued			
*Preservation of Natural Resources	79	75	64
*Snowmachine	126	225	113
*Camping	182	182	159
*Closed Area	212	286	363
Verbal Warnings for Firearms	660	664	725
*Firearms	29	25	35
*Wildlife/Hunting	5	15	11
Fishermen contacts	2,770	8,569	10,280
Verbal Warnings for Fishing	287	565	519
*Fishing	17	76	96
*Swimming/Bathing	41	117	79

Visitor Fatalities

1. Marion Dolton, July 2, 1995, car accident
2. Kirtland Watkins, July 4, 1995, airplane crash
3. Gary Brockway, September 8, 1995, fell from cliff
4. Milan Kapusta, September 17, 1995, fell from cliff
5. Ruth Wedl, October 7, 1995, heart attack

<u>Emergency Medical Services</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Basic Life Support cases	551	572	594
Advanced Life Support cases	115	145	128
TOTAL # Cases	666	717	696
NPS Ambulance Transports	280	288	263
Air Ambulance Transports	50	43	55

West Park Hospital of Cody, Wyoming, the park medical services concessioner, provided oversight to the park EMS program. In 1995, the park had a total of 123 personnel certified as EMS providers. This number included 33 First Responders, 77 EMT-1s, 11 Park Medics, and 2 Paramedics. A total of 523 staff-days of EMS training was conducted.

<u>Search and Rescue</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
# SAR incidents	41	21	44
# work hours on SAR incidents	3,409	1,775	1,478
personnel costs	\$42,300	\$34,080	\$33,804
# flight hours on SAR incidents	25.9	12.5	14.9
flight costs	\$21,548	\$11,900	\$16,314
Total SAR expenditures	\$63,848	\$45,980	\$50,118

<u>Structural Fire</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Alarms	193	292	224
Fires	13	34	15
Extrication	n/k	n/k	4
Hazardous materials responses	n/k	n/k	3
TOTAL	206	326	246

The park acquired two hazardous materials response trailers and a government surplus 1 ton truck which was retro-fitted to serve as an extrication/utility vehicle. The structural fire staff and the Mammoth Hot Springs fire department moved their offices and base of operations into the new Emergency Operations Center (EOC) in the former garage. The staff constructed a smoke simulation area in the new EOC which will provide training on confined space rescue, self-contained breathing apparatus, toxic environment bottle changes, and physical fitness.

Wildland Fire Operations

1995 had a very slow fire season with only 16 fire starts burning a total of approximately 2 acres; 10 were lightning-caused and 6 human-caused. Of the lightning-caused fires, 9 were declared prescribed natural fires (PNFs), with the Bear fire being the only PNF that burned more than an acre (1.25 acres). The slow fire season was, in part, due to late spring snowfall and a relatively wet June and July. Most of the park averaged over 110% of normal overwinter precipitation by the start of the fire season. Mammoth received 106% and 160% above average rainfall in June and July respectively and Snake River received 210% of normal in July.

Yellowstone played an important role in interagency dispatches in 1995. There were 15 separate resource order requests in which 28 Yellowstone fire personnel were dispatched on out-of-park wildland fire assignments. Among these assignments, five helitack personnel were sent to western Canada to support one of their busiest fire seasons on record, two dispatchers were sent to Virginia to support their early spring fire season, and one helitack crew member had an extended assignment to western Colorado.

Four Yellowstone personnel were assigned to Incident Management Teams in Region 1 with three of those individuals receiving fire assignments. The NPS created three prescribed fire teams of five persons each in 1995 with one team being stationed in Yellowstone. These teams are considered national resources and the Yellowstone team was on out-of-park assignments most of the summer to assist in prescribed burning and to monitor PNFs. These assignments took the team to Glacier, Grand Canyon, Yosemite, Dinosaur, Joshua Tree, Lassen, and Lava Beds.

The park trained over 175 personnel in various fire courses that included Basic Firefighter (S-130 and S-190), Pumps (S-211), Chainsaws (S-212), Helicopter Training (S-217), ICS (I-220), Standards for Survival, Expanded Dispatcher Recorder, and Strike Team Leader.

Air Operations

1995 was the second year of a three contract agreement with Geo-Seis Helicopters of Ft. Collins, Colorado. The aircraft provided was an Aerospatiale 315b "Lama." The flight rate was \$1,005 per hour with a 200 hour guarantee for the 108 day contract period, June 15 through September 30.

The contract helicopter flew 210.8 flight hours with the majority of hours (88.1) flown in support of interagency wildland fire suppression operations outside the park in the western United States. Search and rescue operations involved 14.9 flight hours including one incident involving a short haul operation. In that incident, the short haul operation implemented by two helitack crew

members was instrumental in recovering the body of a park visitor who had fallen into the Grand Canyon of the Yellowstone from the North Rim. Other significant operations included moving the Three Rivers cabin and supporting that construction operation.

There were 53 park-related, air-medical flights flown in 1995. Of these, EIRMC flew 39, Bannock 6, Billings 6, Casper 1, and SLC 1.

Corral Operations

The corral operation had 90 head of stock including six mares to foal, one open mare, and two yearling fillies. Four horses and one mule were purchased in Tennessee and four horses and one mare were purchased locally. A total of nine animals were surveyed.

The corral operation purchased 100 tons of small square hay bales and 125 tons of large round hay bales in 1995. The small bales of certified weed free hay came from a private contractor in Townsend, Montana, who delivered the hay to the Stephens Creek facility. This hay was then distributed to various park locations by park personnel. The large bales purchased from a contractor in Emigrant, Montana, were hauled to Stephens Creek by park personnel and used at Stephens Creek. The park also purchased 5 tons of hay cubes (primarily for backcountry use), 8 tons of grain, 0.5 ton of Crystlyx mineral, and 1 ton of salt.

There were five mares bred to foal in 1995, three of which foaled, each having filly colts. One of the colts was surveyed due to crooked legs. There were six mares bred in 1995 that are waiting to foal in 1996.

Regular corral operation duties included providing health care of the stock herd including vaccinations and worming, training of young and new stock, summer shoeing of park stock, supplying feed to the field stations, and conducting stock use training for park personnel.

The corral operation was requested to provide considerable logistical assistance to the wolf reintroduction program in 1995. Corral personnel assisted with the highway transportation of wolves from Great Falls to the park in January. The corrals staff used two mule teams and bobsleds to transport the wolves in kennels from the trailheads to the three acclimation pen sites, then used the teams/sleds to haul meat to the pens on a regular basis until mid-March when the wolves were released.

Other special projects included packing 5-foot solar panels and dirt samples for the Center for Resources; supplying the Mt. Holmes and Mt. Sheridan fire lookouts; packing feed, lumber, and supplies for backcountry ranger stations; and assisting a hazard fuel reduction project at Lake by using two mule teams, rather than

machinery, to skid logs that were identified for removal to the roadside.

<u>Backcountry Management</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
# Backcountry Permits Issued	6,586	7,005	7,268
# Visitor Use Nights	45,135	45,267	45,774
# Stock Use Nights	8,584	7,774	7,256

Backcountry use increased again in 1995, reaching the highest levels of use since 1981. Increasing backcountry use is a regional trend as both Rocky Mountain National Park and Glacier National Park are experiencing increasing use. Of the 7,268 permits issued in 1995, private parties obtained the majority (5,500 or 75.7%), followed by employees (1,430 or 19.7%), commercial users (289 or 3.9%), and administrative users (49 or 0.7%).

This increase in use occurred despite unusually wet and cold spring and early summer weather conditions. Many trails and campsites were closed until early July; in fact, most of the Bechler region was closed due to high water and heavy snow until the third week of July. Although the planned backcountry trips of many visitors were re-routed, many other visitors were denied trips due to the weather conditions.

Backcountry rangers and trail maintenance crews cleared an unusually high number of trees in 1995. Research shows that most fire-killed trees fall 8-10 years after a fire. The major fire events Yellowstone experienced in 1998 ensure that a high number of trees will need to be cleared for the next 2-3 years.

The computerized backcountry campsite reservation system, which was initiated in the Backcountry Office in 1993, worked well with few significant glitches. A remote computer station was installed at the backcountry desk in the Mammoth Visitor Center in 1995. Six additional remote terminals were installed at Canyon, Old Faithful, Lake, Grant, Tower, and the West Entrance in 1995. Printers were also installed at Mammoth, Canyon, Lake, Grant, and Old Faithful allowing permits to be printed directly from the reservation screen. The computerized reservation system allows field offices greater access to reservation information and increases the efficiency of issuing backcountry permits.

The *Draft Backcountry Management Plan and Environmental Assessment* was released for public comment in 1994. Final approval of the plan was delayed pending the arrival of new Yellowstone Superintendent Michael Finley. After Superintendent Finley reviewed the plan, his suggested changes were forwarded to the U.S. Fish and Wildlife Service for concurrence. Formal consultation was initiated with a March 1996 deadline. The plan cannot be approved until after this deadline.

Five rangers attended the Fourth Annual Rocky Mountain Area Backcountry Manager's Workshop held May 3-5 in Estes Park, Colorado. Workshop topics included training requirements for backcountry patrol staff, backcountry permit systems and reservation fees, the Leave No Trace program, llama-bighorn sheep disease transmission, and problem-solving scenarios. The group also drafted recommendations to the NPS Wilderness Steering Committee and research priorities for the Aldo Leopold Wilderness Research Center.

<u>Limited Concessions Permits</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
# Limited Concessions Permits	59	58	56
# commercial stock trips reported	657	569	616
# LCPs transferred/terminated	0/3	0/1	0/2

In 1995, there were 56 saddle and pack stock outfitters who operated in Yellowstone under Limited Concessions Permits; three of these were llama packers. Over 200 outfitters and guides attended the annual two-day meeting in June. In addition, winter meetings were held in Cody and Jackson, Wyoming, and Bozeman, Montana.

A new four-year Concessions Prospectus for Saddle and Pack Outfitters was developed in 1995. Due to the federal government shutdown in November and December, 1995, and January, 1996, the prospectus was not issued until February 1996.

Resources Management Operations

The RMO&VP Division is responsible for developing and implementing the Resource Operations Program required to fulfill the broad direction outlined in Yellowstone's Resource Management Plan. District Rangers, Sub-District Rangers, and the District Resource Management Coordinators, in cooperation with the Division's Resource Management Operations Coordinator, jointly plan and accomplish the program.

Resource Operations Program 1995 highlights include:

Exotic Vegetation Management

RMO&VP staff is responsible for preventing, monitoring, and controlling exotic plant infestations. Increasing infestations, recent amendments to federal laws, and an increase in ground disturbance due to highway reconstruction have focused more effort and attention on the exotic plant program. In 1994, the park established a resource team to update the 1986 Exotic Vegetation Plan and write an Environmental Assessment for the new plan. The draft plan was completed in the winter of 1995/1996. The Environmental Assessment is being written. Weed managers continued to upgrade the WEEDBASE database program (created in 1994) to better monitor and evaluate weed infestations. Information stored

in the program is used to complete herbicide use logs, Greater Yellowstone Area weed reporting requirements, and to develop parkwide weed maps using ARCInfo GIS software. Working with the Maintenance Division, sand and gravel pits in Park and Gallatin Counties were inspected for weed infestations and contracts were modified to prevent the introduction of noxious weed. Three special programs were initiated in 1995: 50 long-term exotic vegetation monitoring plots were established parkwide; a cooperative mapping project (involving 12 cooperators) was completed through the efforts of the Henry's Fork Weed Management Area; and weed infestations on concessions land assignments were surveyed and mapped. Managers were actively involved in several ecosystem weed initiatives including the Upper Madison, Henry's Fork, and Upper Snake River Weed Management areas and a cooperative information exchange with Glacier National Park. An aggressive weed control program involving 160 staff and 40 volunteers treated 33 species including 553 acres of knapweed, 30 acres of toadflax, 66 acres of woolly mullein, 168 acres of houndstongue, 114 acres of yellow sweetclover, 23 acres of musk thistle, 92 acres of whitetop, 30 acres of ox-eye daisy, 217 acres of Canada thistle, and 120 acres of other weeds.

Resource Management Workshop

The Ninth Annual Resource Management Workshop, *Yellowstone's Cultural Resources*, was held February 7-9 at the YCC Camp in Mammoth Hot Springs. Featured speakers included Intermountain Field Director John Cook, former Park Historian Aubrey Haines, archeologist Ann Johnson, historic architect Jim McDonald, archeologist Larry Loendorf, former park ranger Bob Murphy, and ethnographer Dave Rupert. Over 150 people attended the workshop, and Cultural Branch Chief Laura Joss played a significant role in planning the workshop.

Fisheries Management

RMO&VP staff, with income generated by the fishing fee program, emphasized fishing education and regulation enforcement. A parkwide training program was upgraded to teach permit issuers to interpret regulations and present the information to anglers. Compared to 1994 (the first year of the program), parkwide violation notices increased 26% (from 76 to 96) and angler checks increased 17% (from 8,857 to 10,360). Approximately 14% of all anglers were contacted. Thirty-six fisheries exit gate surveys were completed at the entrance gates to calibrate and complement the Volunteer Angler Report system.

RMO&VP staff cooperated with other park staff to identify and monitor lake trout presence in Yellowstone Lake. Field staff coordinated informational contact with visitors and TWRS fishing guides who caught lake trout in the lake, produced a field form to report lake trout catches, coordinated surveys of anglers at Bridge

Bay Marina for further lake trout information, contacted fishing guides and stores for lake trout posters and information signs, assisted with fall gill-netting for lake trout, and served as a member of the resource team established to lead lake trout efforts.

Inventory and Monitoring

Staff monitored amphibians in cooperation with Dr. Charles Peterson, Idaho State University, at the South Entrance Pond and Harlequin Lake. Dr. Peterson monitored on a monthly basis; park staff filled in on a weekly basis. Data are analyzed and reported by Dr. Peterson.

Whitebark pine transects at Avalanche Peak, Pitchstone Plateau, Big Game Ridge, and Two Ocean Plateau were monitored in cooperation with the Bear Management Office and the IGBST. Data were forwarded to the IGBST for analysis.

RMO&VP staff monitored air quality at the National Atmospheric Deposition Program station (NADP) at the Tower Ranger Station including collecting and performing conductivity, Ph, and volume measurements on 52 weekly precipitation samples. Staff also participated in four inter-site comparison studies, processed one "blind audit sample," underwent inspection and testing by a USGS contractor, and maintained the Air Quality station at the Lake Ranger Station including maintaining the Particulate Monitoring Network (IMPROVE) sampler system, Ozone Effects sampling, and gaseous pollutant and visibility monitoring program.

In cooperation with USFS-Northern Region, RMO&VP staff monitored gypsy moth presence parkwide. RMO staff placed and retrieved 76 pheromone traps throughout the park. Caught one male moth at Canyon which will necessitate delimitation trapping in 1996.

Geothermal Management and Physical Resources

RMO staff and volunteers continued monitoring thermal pools and geysers in the Upper, Middle, and Lower Geyser Basins for vandalism. Coins, cigarette butts, asphalt, sticks, rocks, and nails thrown into the thermal features were removed by hand. In addition to the hand clean-out efforts, Corral Pool, several small pools near Riverside Geyser, and a pool at Black Sand Basin were vacuumed out with the assistance of the Maintenance Division and the honey wagon. RMO and maintenance staff removed and reconstructed a barrier fence at Corral Pool to improve visitor safety and reduce damage to the pool. Bumper logs were installed adjacent to three features in the Riverside Geyser area to minimize resource damage. In addition, an experimental elevated ski trail was constructed at three locations in the Upper Geyser Basin to minimize off-trail skiing and subsequent resource damage. Staff collected water samples at eleven locations throughout the year as part of a cooperative USGS/NPS program monitoring area geothermal

activity. RMO staff also monitored water flow in Reese Creek in response to irrigation rights.

Hazard Trees

Hazard tree management activities increased in 1995 beginning with a hazard tree training program at Canyon Campground. Respective districts conducted surveys and removed hazard trees or marked trees for concession removal in concession land assignment areas. At Madison Campground, over 3,000 trees were surveyed with 248 marked for subsequent removal by TW Services. Following tree removal, 55 trees were hand transplanted in the campground by RMO staff. In addition, approximately 50 trees in the West District were removed from developed areas, roadside picnic and pull-out areas, and roadsides. Hazard tree surveys in the Grant Campground and contractor's trailer court and Lewis Lake Campground resulted in removing 63, 400, and 52 trees, respectively.

Site Restoration

A resource team was established in 1994 to plan and execute restoration of the Boundary Line Area (BLA) in anticipation of NRPP funding scheduled to begin in FY 94. The goal of the project was to restore natural ecological processes in the BLA in terms of drainages, vegetation, and landforms (in keeping with the cultural and area integrity). Jim Sweaney, North District RMC, was appointed as the interim project leader. The committee drafted a task directive and a scope of work; contracted with Archivist Lee Whittlesey to produce a historical report on the area; contracted with WASO Geologist David Steensen to plan restoration of the irrigation ditches, railroad bed, and Landslide and Stephens Creeks; and purchased physical equipment to complete restoration. The technical subcommittee continued researching vegetative restoration methods including installing a three-acre test plot. Due to budget shortfalls, the NRPP money dedicated to the BLA project was re-directed. Nevertheless, some progress was made in 1995 including completing an archeological survey on a portion of the area (in cooperation with the Gallatin National Forest), collecting native seeds, and continuing research on the best methods of revegetation. In fall 1995, the BLA oversight committee recommended suspending the project due to a lack of funding.

Wildlife Management

RMO&VP staff coordinated spring carcass surveys on the Firehole River, Norris, and Heart Lake areas with the Bear Management Office. Data were forwarded to the Bear Management Office for analysis. Staff monitored Yellowstone Lake tributaries for cutthroat trout spawning and associated bear activity at Lake, Bridge Bay campground, and Grant Village Campground. The Lake District Resource Management Coordinator, the Resource Management Operations Coordinator, and the Bear Management Specialist co-

authored a paper for the Yellowstone Predator Conference analyzing and interpreting spawning use data from 1989-1995. RMO&VP staff performed interpretive talks on bear habitat use and management for park visitors, classrooms, and professional meetings and oriented park employees to the park's bear management program and to living in grizzly bear habitat. Other wildlife management projects completed in 1995 include: managed habituated coyotes, elk, bison, grizzly bears, and black bears parkwide; conducted integrated pest management programs for bats at the Lake Ranger Station, Lake Lodge, Lake Hamilton's Store, and the Grant Village Camper Services Building; assisted with logistics and security for the wolf reintroduction project.

Bison Management Operations

Bison management operations along the park's boundary with Montana continued to function under the terms of the Interim Bison Management Operating Plan. As a result of management actions by the state of Montana, a total of 397 bison were removed from lands neighboring the park in 1995. In the West Yellowstone area, 98 bison were removed and 299 bison were removed from the Gardiner area. During the fall, West District personnel (for the West Yellowstone area) and North District personnel (for the Gardiner area) monitored bison activity within or near the park boundaries, initiated and conducted strategic hazing activities to move bison back into the park, and assisted the Montana Department of Fish,

Wildlife, and Parks and Department of Livestock with bison shooting operations upon request. NPS personnel involvement and costs for bison management operations is indicated below.

<u>West District</u>	<u>1994</u>	<u>1995</u>
Monitoring	210 hrs.	120 hrs.
Hazing (# incidents)	18 hrs. (5)	65 hrs. (11)
Shooting Ops. (# incidents)	55 hrs. (3)	45 hrs. (4)
TOTAL Staff Time	283 hrs.	230 hrs.
Estimated Cost	\$4,245.00	\$3,450.00

North District

Monitoring	93 hrs.	152 hrs.
Hazing (# incidents)	206 hrs. (10)	52 hrs. (7)
Shooting Ops. (# incidents)	78 hrs. (3)	654 hrs. (20)
Corral operation	n/a	64 hrs.
TOTAL Staff Time	377 hrs.	922 hrs.
Estimated Cost	\$5,655.00	\$13,830.00

Wolf Reintroduction

After many years of analysis and planning, fourteen gray wolves from Canada were relocated to the park in January 1995, held in three acclimation pens for approximately 10 weeks, then released into the wild. Division personnel played a major role in planning portions of the relocation operation and in providing security during the two relocation events, 24-hour security for the pen sites throughout the acclimation period, and logistical support to the wolf feeding operation during the acclimation period. Division staff spent a total of 10,227.5 hours on wolf project activities in 1995 at a total cost of \$115,394. Of these totals, 9,889 hours (\$108,624) were funded by the wolf project and 338.5 hours (\$6,770) were contributed by base funded personnel.

YELLOWSTONE CENTER FOR RESOURCES

Director (GM-14) - John Varley

Assistant Director (GS 13/7) - Wayne Brewster

In 1995, the Yellowstone Center for Resources staff included 65 people totaling 41.23 FTE. An additional 1.59 FTE from other divisions was assigned to YCR projects or programs with salary and support provided by YCR. Within these totals, seasonal technician support was provided to the U.S. Fish and Wildlife Service Fisheries Assistance Office (0.84 FTE) and to the Interagency Grizzly Bear Study Team (1.1 FTE). The total FTE were apportioned among YCR branches as follows: Administration and Professional Support, 20%; Natural Resources, 41%; Cultural Resources, 17%; Planning and Compliance, 14%; and Advanced Resource Technology, 8%.

YCR was allocated \$1.5 million from ONPS on March 8. In June, the Superintendent approved YCR's proposed spending plan for the second of three annual \$300,000 grants from the Natural Resource Preservation Program (NRPP), and these funds were allocated to various natural resource priorities. YCR received \$65,000 from fishing permit fees to help defray costs associated with the initial survey for lake trout in Yellowstone Lake. The Superintendent funded the Lake Trout workshop (\$8,000) and the West Yellowstone air quality monitoring project (\$13,000) out of park reserves. The Superintendent also obtained \$190,000 in one-year ONPS funds to support the wolf recovery program. Federal Highways funded \$303,600 for natural resource inventories (including approximately \$108,000 for the purchase of geothermal mapping equipment), archeological/cultural compliance, and planner's salaries. Responses to proposals submitted for the consolidated budget call from the Rocky Mountain Regional Office yielded a total of \$46,300: \$35,000 from the Cultural Resource Preservation Program (CRPP) for various projects; \$7,000 from Preservation, Restoration and Mitigation (PRAM) for a grizzly bear study in connection with the Noranda Mine proposal; and \$4,300 from Expedition into America Volunteers for a rare plant survey. Of the nine proposals submitted for the consolidated budget call for FY96, one was approved and partially funded in FY95: \$120,000 from the NRPP for a joint Yellowstone-Grand Teton Bison/Brucellosis Research Study.

Total YCR funds were allocated as follows: Administrative and Professional Support, 18%; Natural Resources, 53%; Cultural Resources, 13%; Planning and Compliance, 9%; and Advanced Resource Technology, 7%. As in 1994, ONPS funds accounted for slightly over half (57%) of the total YCR budget. Sources of soft funding included: NRPP 16%, Federal Highway 12%, Wolf Project special funding 7%, other (including donations) 6%, and CRPP 2%.

Yellowstone completed revision of its Resource Management Plan (RMP) after a multi-year effort. Superintendent Finley approved the plan in March 1995, setting new priorities for natural and cultural resource projects. The Planning Office assisted all divisions in development and resource management planning, including work on development concept plans and updates to the *Exotic Vegetation Management Plan* and *Backcountry Management Plan*; participation on resource teams for Boundary Line Area Restoration, Fishing Bridge Campsite Replacement, Mammoth Housing, Road Reconstruction, Winter Visitor Use Management (VUM), and Yellowstone's Research Permitting System; preparation of compliance documents and environmental impact statements for park projects; assistance with permit applications and consultation with regulatory agencies such as the U.S. Army Corps of Engineers for all actions in wetlands or streams, and the U.S. Fish and Wildlife Service for threatened and endangered species; coordination of project clearance and tracking systems to process 24 small projects that were excluded from further NEPA compliance; and completion of projects to increase accessibility for park visitors and staff.

YCR staff also provided parkwide support in the form of spatial analysis and GIS programs, and provided logistical, housing, equipment, staff, and other assistance to cooperative researchers working in numerous disciplines. Staff provided resource interpretation in the form of personally performed talks and programs as well as publications including the quarterly magazine *Yellowstone Science* and the more informal newsletters, *The Buffalo Chip* and the newly created *Wolf Tracker*.

More detailed information about YCR programs is available in the Yellowstone Center for Resources' Annual Report for 1995.

PROGRAM HIGHLIGHTS

Archeologist Assigned to Yellowstone

For more than 10,000 years, various native American tribes have used the Yellowstone region, creating thousands of archeological sites. The earliest documentation of archeological sites in Yellowstone was made by Philetus W. Norris during his superintendency of the park (1877-1882). The first archeological surveys were conducted in 1958 and 1959, and 224 sites were recorded. To date, only a fraction (less than 2 percent) of the estimated sites in the park have been surveyed, and little of the archeological work that has occurred has been research oriented--the majority of the surveys have been preparatory to park development projects or operational activities. It has, therefore, long been an aspiration in Yellowstone to establish an archeologist position to help in designing and supervising research and management-oriented archaeological surveys that would add to the general body of knowledge about Yellowstone's

past. This staff specialist would also assist with modern-day planning, construction, resource management, and compliance responsibilities as they relate to the protection and interpretation of archeological resources.

In 1995, progress was made toward increasing the park's ability to understand and protect its archeological resources. Ann Johnson, the NPS archeologist previously stationed in the Rocky Mountain System Support Office, was detailed to the park during the summer; in October her official duty station was changed from Denver to Yellowstone. Her time was divided between Yellowstone Federal Highway Administration archeological projects (40%) and System Support Office projects (60%). During 1995, 133 of the more than 600 archeological sites recorded in the park were identified, and 7,485 acres along 85 road miles were inventoried in connection with road reconstruction projects. While this arrangement of her work assignment is only an interim plan and she is only available part-time for Yellowstone projects, the park hopes to capitalize on her presence and expertise and, in the future, establish a full-time staff archeologist position.

Fountain Soldier Station Revealed

During archeological surveys for road reconstruction activity along the Madison to Old Faithful corridor, a team of scientists from the NPS Midwest Archeological Center identified the original site of the historic Fountain Soldier Station. The general location of the site was suspected to have been previously buried under the existing road corridor, but fieldwork in the autumn of 1995 revealed evidence of the original foundation and root cellar of the military outpost just off of the road. Detailed information and written and photo documentation of the site were compiled by the research team who also will use the information to add to our understanding of military life in the park's early years.

Grizzly Bear Population Suffers High Mortalities, Mostly Outside Park

Eighteen grizzly bear are known to have died in the Greater Yellowstone Area during 1995 which is, unfortunately, the highest known total in more than 10 years. The good news is that only three of these mortalities occurred within the park, and those were the result of an unusual accident.

Visitors notified park rangers of three dead bears they had seen along a powerline corridor while on horseback in Hayden Valley on August 21. Rangers investigated the site with personnel from the Montana Power Company the next day and found three grizzlies (a sub-adult and two adults) ranging from 200 to 350 pounds in size, and a fallen tree on the power line, stretching it down to about a foot and a half off the ground. The evidence suggested that

the bears had encountered the power line during a period of about 10 days, from August 10 to August 20. The bears may have been traveling on the corridor and been attracted by the buzzing and humming of the downed line.

Although the grizzly bear population in the ecosystem appears to have been increasing during the past decade and recovery parameters were met in 1994, the high number of mortalities in 1995 exceeded acceptable levels and caused renewed concern. In particular, the more preventable types of human-caused mortalities, such as those that result from hunter kills or nuisance-bear control actions, continue to receive high management emphasis in and outside the park. As in 1994, Yellowstone had no accidental or planned management removals of grizzly or black bears from the park in 1995.

Scientific publications affirmed the apparent increasing trend in grizzly bear population production and survival, and park staff participated in an interagency effort to prepare a long-term Conservation Strategy for the Yellowstone Grizzly Bear population. Efforts to maintain and restore habitat for bears, including restoration of previously disturbed areas near Fishing Bridge, continued. Park biologists also continued to assist in the efforts to produce an ecosystemwide cumulative effects model to assess the status of bear habitat.

Bison Management Remains Controversial, Montana Files a Lawsuit

Bison planning, management, and interagency coordination occurred on three fronts during 1995: planning efforts with the state of Montana, continued management of migrant bison on the north and western boundaries, and interagency activities through the Greater Yellowstone Interagency Brucellosis Committee (GYIBC). The Governors of Idaho, Montana, and Wyoming and the Secretaries of Interior and Agriculture signed a Memorandum of Understanding creating the GYIBC in 1995. Its goal is to protect and sustain existing free-ranging elk and bison populations of the GYA, to protect the brucellosis class-free status of the three states, and to plan for the elimination of brucellosis by the year 2010. Numerous technical committee and executive committee meetings have been held attempting to reach consensus on future direction.

The park has been involved in preparing a long-term management plan for bison for more than five years. The agency review of the draft environmental impact statement (DEIS) was completed in December 1994, but further progress was suspended when the state of Montana filed suit on January 17, 1995, against the Animal and Plant Health and Inspection Service (APHIS) and the National Park Service (NPS), alleging that the inconsistent policies of the two federal agencies were causing economic hardship for its cattle producers. Several states had imposed or threatened to impose brucellosis testing requirements on cattle shipped from Montana

because bison that had been exposed to brucellosis were allowed in Montana. The park shifted its focus from the DEIS to attempts to reach settlement with APHIS and then Montana. After months of negotiation and discussions with Department of Justice, Office of the Solicitor, APHIS, and the state of Montana, an agreement was signed and approved by the court on November 13, 1995.

While a long-term effort to develop an interagency bison management plan stalled, interim efforts to manage bison in and outside YNP continued. Because of the concerns over potential for brucellosis transmission to livestock on public and private grazing lands outside the park, the Montana legislature changed the jurisdiction for Yellowstone bison from the Department of Fish, Wildlife and Parks (MDFWP) to the Department of Livestock (MDL). The following management actions proposed in the EA would be jointly administered by NPS, APHIS, MDL, and MDFWP:

- On federal land, free-ranging bison would be permitted where there is no livestock.
- Near West Yellowstone, bison would be captured and tested; those that test positive would be sent to slaughter, and those that test negative would be released.
- Near Gardiner in YNP, all bison would be captured and sent to slaughter because of livestock on adjacent land.

Previous interim operating procedures (under which bison that leave the park in Montana may be shot) remained in effect. During the 1994-1995 winter, 426 bison were killed by Montana personnel outside the northern and western park boundaries. Most of the carcasses were donated to Native American tribes or to social service organization for distribution to the needy.

Bald Eagles

The U.S. Fish and Wildlife Service downlisted the bald eagle from "endangered" to "threatened" in July of this year because of its significant population gains in most of North America. This includes Yellowstone, where 15 eaglets fledged from 19 active territories in 1995. The bald eagle can be seen year-round in the park, nesting usually in riparian zones such as along the Yellowstone and Madison Rivers where the raptors can find fish at any time of year in the thermally-influenced, open waters. The eagles also prey on small mammals and scavenge on the carcasses of winter-killed elk and bison, particularly on the northern range and in the Firehole Valley. The park's bird biologist regularly participates in cooperative efforts with neighboring landowners and agency representatives to monitor and protect bald eagles and other rare birds.

Peregrine Falcons

Endangered peregrine falcons are also doing increasingly well in

the park, with 22 young falcons fledged in 1995. In the early 1980s, managers focussed efforts on "hacking" peregrines in Yellowstone and elsewhere in the West to restore them; at that time little was known about their nesting status in the park. For the past decade, concerted efforts have been made to survey historic and potential nesting habitat for peregrine eyries, resulting in more nesting sites being found. Prior to this year, the highest number of peregrine fledglings in the park was 17 observed in 1992. This season, 11 known eyries were monitored, and the park's bird biologist believes the peregrine falcon is "ecologically recovered in Yellowstone."

Experts Advise Park on Lake Trout Crisis

Yellowstone invited ten fisheries biologists from across North America, who possess a vast array of experience managing salmonids, to discuss the threat presented by the non-native lake trout discovered in Yellowstone Lake in 1994.

The three-day workshop was planned and conducted by YCR staff, primarily from the Branch of Natural Resources. The guests heard from park staff and U.S. Fish and Wildlife Service's Yellowstone Fisheries Assistance Office (FAO) staff on the state of information about Yellowstone Lake fish, macro-invertebrates, and piscivores, as well as management policies, fishing regulations, bathymetry and access. The experts conducted a brainstorming exercise on management alternatives and evaluated the likelihood of success. Wild ideas were fair game, as the panelists considered everything from no action to the introduction of seals and sea lampreys to prey on or serve as alternate prey for the lake trout. The workshop culminated in a written report by McIntyre et al. (1995) that recommends a program of experimental gill-netting to control lake trout and increase the database on the trout population in Yellowstone Lake.

As recommended by the panel, experimental efforts to gill-net non-native lake trout continued during the summer field season. The FAO designed a sampling program around likely "choke points" for lake trout movement in Yellowstone Lake that had been identified by the experts, based on their knowledge of lake trout ecology and Yellowstone Lake bathymetry. Additional equipment, including gill nets and net pullers for the FAO gill-netting boat, were purchased with fisheries fee monies. NPS personnel from various park divisions assisted FAO staff in twice-weekly gill-netting efforts, catching 152 lake trout during the 1995 season; another 43 lake trout were reported by park anglers. The non-native fish, unfortunately, appeared to be well-established in the lake, perhaps having been planted a decade or more prior to their discovery. Efforts to educate the public and potential funding sources were undertaken, and the park published *The Yellowstone Lake Crisis: Confronting a Lake Trout Invasion*. This special trout report summarized the discovery of non-native lake

trout in Yellowstone Lake, the threats it poses to aquatic and terrestrial components of the ecosystem, and the scientific recommendations for dealing with the crisis.

National Park Foundation Grant Supports Fieldwork

As part of its Expedition into the Parks program, the National Park Foundation (NPF) awarded a \$4,300 grant for survey work on the distribution of the two vascular plants that are unique to Yellowstone. The survey for Ross' bentgrass, *Agrostis rossiae*, was undertaken in June during the brief period that this grass can be correctly identified. The park's botanist/herbarium curator, assisted by technicians funded by the NPF grant, surveyed the West Thumb Geyser Basin, Potts Hot Springs, outlying areas of the Lower Geyser Basin, Amphitheater Springs, and the Heart Lake Geyser Basin for populations of the endemic plant that lives exclusively on thermal ground. A new population of Ross' bentgrass was located in eleven separate patches of thermal ground in the Twin Buttes area of the Lower Geyser Basin, which represents an extension of the species' range from the closest known population at Midway Geyser Basin. An additional outlying population of this rare plant was located prior to NPF-funded fieldwork in a minor thermal area within a quarter of a mile of the population in the Lower Geyser Basin.

Third Biennial Science Conference Focuses on Predator Ecology

The third biennial scientific conference on the Greater Yellowstone Ecosystem was held at the Mammoth Hotel from September 24 through September 27. Entitled "Greater Yellowstone Predators: Ecology and Conservation in a Changing Landscape," the conference was attended by more than 200 researchers, managers, and the general public. More than 40 presentations covered a wide-range of topics including multiple-species interactions; predator behavior; natural history documentation; research techniques; conservation biology and management; physiological ecology; and population dynamics and ecology.

Dan Janzen, professor of biology at the University of Pennsylvania, delivered a keynote talk on the role of predation in ecosystems with three stories spanning Asia, Australia, Serengeti, and the New World. Another keynoter, Steve French of the Yellowstone Grizzly Foundation, shared recent applications of molecular DNA techniques to predator ecology, systematics, and conservation, especially that of bears.

At the Superintendent's International Luncheon, invited speaker Stephen Herrero, professor at the University of Calgary, Alberta, and author of the book *Bear Attacks*, spoke on the topic of "Wild Love"—the dedication to the wild that he sees as a common characteristic in wilderness and wildlife researchers throughout

the world. Yellowstone wolf project leader Mike Phillips gave an evening presentation about the status of wolf recovery in the park and introduced cinematographer Bob Landis, who showed his footage of Yellowstone's newly arrived wolves interacting with coyotes, grizzly bears, elk, and bison.

Mark Boyce from the University of Wisconsin served as conference summarizer, and the first two days of the conference concluded with a poster session, an evening banquet, and presentation of the A. Starker Leopold Lecture. Posters, which were up for most of the conference, were presented on 11 topics ranging from aquatic insect predators to a test of the attractiveness to bears of the alternative fuel rape-ethyl ester. The A. Starker Leopold Lecture, "The Value of Long-term Carnivore Studies in National Parks," was presented by U.S. Fish and Wildlife Service wolf biologist L. David Mech.

Following the two-day conference on September 27, a special symposium, "Carnivores in Ecosystems," was co-hosted by the Northern Rockies Conservation Cooperative and the NPS. The symposium featured a series of invited researchers who have conducted long-term studies of large and mid-sized carnivores in greater Yellowstone. They were joined by theoretical ecologists and presented a comprehensive overview of the history, ecology, and conservation of the ecosystem's carnivores. Symposium organizers plan to publish these papers in book form.

YCR staff participation in the conference included:

Paper Presentations

- Robert Crabtree and John Varley. Ecological role of the coyote on Yellowstone's Northern Range.
- Terry McEneaney. The common raven: an important Yellowstone predator.
- Kerry Gunther, Mark Biel, Kris Churchill, and Rebecca Danforth. Changing problems in bear management, Yellowstone National Park: 20+ years after the dumps.
- Dan Reinhart, Tom Olliff, and Kerry Gunther. Management of bears and developments on trout spawning streams in Yellowstone National Park.
- Roy Renkin and Kerry Gunther. Predicting grizzly bear mortality in relation to front country developed areas in Yellowstone National Park
- Mark Johnson, E. Williams, R.D. Schultz, Eric Gese, Robert Crabtree, and Wayne Brewster. A pre-wolf disease survey in Yellowstone National Park.
- Doug Smith and Mike Phillips. Movements and food habits of gray wolves released in Yellowstone National Park.

Poster Presentations

- Mark Biel, Hopi Hoekstra, and Kerry Gunther. Bear attractant test of the alternative fuel rape-ethyl ester.

•Sue Consolo-Murphy and Mary Meagher. The status of wolverine, lynx, and fisher in Yellowstone National Park.

The Commercial Use of Research Specimens: Who Should Benefit?

Yellowstone's geothermal resources support the world's largest concentration of heat-loving bacteria, known as thermophiles, which have led to major advances in medicine and biotechnology. Cloned versions of an enzyme produced by *Thermus aquaticus*, first found in a Yellowstone hot spring, have revolutionized DNA technology through their use in fingerprint analysis and the detection of genetic diseases. This breakthrough has earned its inventor a Nobel Prize and also earned \$200 million a year for the patent holder, a Swiss pharmaceutical company.

About half of the 40 research projects that have permits to collect thermophiles in the park are conducted by biotechnology companies or funded by industry through university-affiliated projects. These tiny research specimens represent not a biological commodity but a piece of "intellectual property" in the form of a genetic code that the park has protected. Although Yellowstone has revised its permit system to prohibit the commercial use of research specimens without permission of the superintendent, there is currently no mechanism by which the park can receive any compensation for such use.

In September, the park brought together 110 scientists from around the world, including representatives of 17 biotechnology companies, to address the issue of commercial use of research specimens. Although no consensus was reached on the question of compensating the park, the conference participants agreed to focus on this issue in January 1996 at a workshop hosted by the National Biodiversity Institute of Costa Rica (INBio). In Costa Rica, companies like Merck Pharmaceutical and Bristol-Meyers are investing large sums in habitat preservation in exchange for access to biological samples. Yellowstone also plans to request a change to the Code of Federal Regulations which would permit, although not require, compensation for commercial application of research specimens.

Operation: Wolfstock

Exterminated as a dangerous predator in most of the United States by the 1940s, the gray wolf was missing from the Yellowstone ecosystem for six decades until January 1995, when 14 wolves were translocated to the park from Alberta, Canada. The wolves' arrival was the culmination of efforts by the interdisciplinary resource team that capitalized on the multiple talents and resources of Yellowstone's divisions. Rangers, interpreters, maintenance, administration, resources, public affairs, and other staff pulled together for *Operation: Wolfstock*. YNP staff and many excited participants and supporters across the continent

shared in the news and anticipation as eight adults and six pups arrived in the park. The wolves were placed in one-acre pens for a 10-week acclimation period to increase the likelihood that the three packs would not split up and would remain within the park and surrounding national forests after release. In late March, the pen gates were opened and Yellowstone's wolves were free to settle into their new home.

Somewhat to the surprise of wolf biologists, at least two wolf pairs mated during the acclimation period and nine pups were born in April. Despite two wolf deaths that occurred during the first year of their return, as of December 31, 1995, 21 wolves were residing in the Yellowstone ecosystem. Also somewhat in contrast to planners' predictions was the wolves' visibility; several thousand visitors were estimated to have seen wolves in the Lamar Valley where they were quite visible especially during elk calving season in late spring and early summer.

The recovery goal is to have within the Yellowstone ecosystem at least ten packs of wolves that have produced pups for three consecutive years. When that is achieved and similar populations are present for three consecutive years in central Idaho and northwestern Montana, the gray wolf will be removed from the list of endangered species and managed as resident species by the respective states. Wolf monitoring and management is a major new responsibility for park staff, primarily two full-time biologists assigned to the YCR staff early in FY95. The Yellowstone wolf reintroduction in 1995 was the climax of years of a long-sought and hard-fought effort to restore this missing native animal to the park, and to progress the species toward recovery in the lower 48 states.

World Heritage Committee Calls Yellowstone "Endangered"

A delegation from the World Heritage Committee met in Yellowstone in September 1995 to tour the ecosystem and listen to concerns expressed by various citizens and organized groups. The committee voted to add Yellowstone to a list of endangered natural and cultural sites that are "of universal value to mankind." Their decision was based on both ascertained and potential dangers and was based upon information presented related to plans for the New World Mine site near the park's northeastern corner, potential development of geothermal systems outside the park, and growing numbers of park visitors.

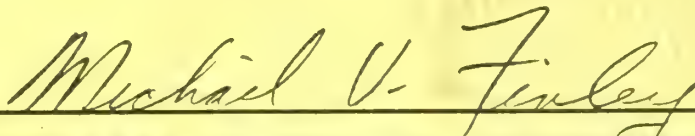
Primary concerns were related to the proposed New World gold, silver, and copper mine near Cooke City, Montana, and included impacts on water quality in the Yellowstone River and its tributaries, associated impacts on aquatic invertebrates and fisheries, groundwater quality, long-term alteration of wildlife habitat, and increased road access, human use, and occupation of the area from the park's northeast entrance to Cody, Wyoming.

The U.S. Forest Service and the Montana Department of Environmental Quality have been working on an environmental impact statement for several years in anticipation of releasing a draft plan for public comment in 1996. Resource management specialists spent a majority of their work time in 1995 providing input concerning the mine proposal and possible effects on park resources and operations. The World Heritage designation highlighted the international level of interest that exists concerning protection of Yellowstone's resources.

NON-CIRCULATING BOOK
MUST BE USED IN LIBRARY

SUPERINTENDENT'S ANNUAL REPORT

**YELLOWSTONE NATIONAL PARK
1996**

A handwritten signature in cursive script, reading "Michael V. Finley", written in dark ink.

MICHAEL V. FINLEY, SUPERINTENDENT

YELLOWSTONE
NATIONAL PARK
LIBRARY
98-40

Table of Contents

Administration	1
Concessions Management	7
Interpretation	10
Maintenance	15
Public Affairs Office	30
Resource Management Operations and Visitor Protection	34
Yellowstone Center for Resources	46

ADMINISTRATION

The position of Administrative Officer (Chief of Administration) remained vacant for the entire year and continued to be filled with acting assignments. Joanne Timmins, Personnel Officer, continued in the acting assignment through June 1996. In July, Gail Menard, Management Analyst, (new hire from Canyonlands NP) took over the acting assignment for the remainder of the year. During the acting assignment, the Management Analyst did an analysis of the administrative operation looking at ways to improve operational effectiveness and reengineer work processes.

The Division Budget for FY 96 was:

ONPS	\$2,140,000
VIP	<u>10,000</u>
	\$2,150,000

Personnel

During 1996, the Personnel Office handled an unprecedented amount of work, took on some additional functions, and lost at least one. Preliminary plans were made for a reorganization of Personnel to be implemented in 1997.

The Payroll Office, formerly under the Fiscal Office, was moved under the Personnel organization. The Payroll Office consisted of two employees; the Civilian Payroll Technician and a Payroll Clerk. Preparations were made for turning over time and attendance submissions to district clerks in anticipation of full FPPS (Federal Personnel/Payroll System).

VIP (Volunteer in Parks) coordination was turned over to the Administrative Assistant for the Chief of Administration.

In terms of workload, the office issued 87 vacancy announcements and recruit bulletins, an increase of 24% over 1995. Personnel actions processed totaled 3,300, an increase of 57% over 1995.

Approximately 100 classification actions and 8 retirements were also processed by the staff. During peak workloads, the office averaged 50 telephone calls/day inquiring about seasonal park ranger positions and other specialized summer seasonal positions.

The office assisted with and processed 2 informal grievances and was involved with 12 different EEO complaints. Three permanent employees were removed through adverse actions appealable to the Merit Systems Protection Board. They also handled 100 active OWCP (Office of Workmen's Compensation) cases.

Mary Heller, Personnel Secretary, transferred to the Division of Maintenance, and was replaced by Karen Winters. Patty Oestreich was hired as a temporary clerk.

Information Resources Management (IRM)

The number of personal desktop and portable computers continued to grow in 1996 with 65 new computers added to the park's property inventory bringing the total number to 352 PCs. The Ranger Division upgraded their PCs with 16 new workstations and notebooks. Included in the new totals were 32 older PCs and 13 Datapoint computers that were surveyed. Of the existing computers, approximately half were intranet capable units. Two Datapoint processors still remain in IRM for the Supply inventory and the Budget billing programs. Network components were purchased as we converted and extended to our internet capable park area network.

User support and training related functions consumed the major portion of the IRM workload. Installation of new and used computer and network systems took more of the staff's time in 1996. Enhancements to the Backcountry use programs and other computer programs and the WEB (World Wide Web) page were also accomplished. Transfer of payroll and budget programs from FTS2000 and regular phone line connections to the LAN/Internet was started (Administration offices mostly completed).

The Supervisory Computer Specialist position remained vacant, and Ron Buss was assigned to act in the position.

Telecommunications

Several personnel changes took place in the Telecommunications Shop during 1996. Harold Anderson completed his temporary detail as shop supervisor in April, and Gary Matthews agreed to supervise the operation on a temporary appointment through the end of the year. Cliff Upton accepted a position with the Forest Service in August. His replacement, Casey Jones, arrived in December.

Audio/visual administration responsibilities were transferred from the Division of Interpretation to Telecommunications. Funding and FTE did not come with the responsibilities; Hank Coleman assumed those duties related to the audio/visual equipment.

Additional floor space became available when the Fire Cache operation was moved to a new location. A remodel project was planned for 1997.

The NPS-owned PBX (Private Branch Exchange) telephone switching system, located in the Mammoth Administration Building, was upgraded and expanded by 100 lines. The Lucent Technologies Division of AT&T completed the project in October at a cost of \$48,000.

Metacom Cellular brought cellular telephone service to Yellowstone by installing cellular equipment sites at Mount Washburn, Grant Village, and the Old Faithful area. During the summer of 1996, the Telecommunications Shop began performing all administrative functions associated with all cellular telephone service used by the NPS in Yellowstone National Park.

Starting in April, Telecommunications Shop employees renovated and replaced outdated wiring in several buildings with "Category 5" wire, a wire that provides the highest speed data transmission medium available. The new wiring systems provided the newest technology to Concessions, Personnel, Administration, Payroll, and the Chief Ranger offices (more than 8,000 feet of wire, associated jacks, terminals, and equipment were installed in the Ranger Division alone) in the Administration Building. New wire systems were also installed in the Supply Center, Soils Office, Fire Cache, Safety Office, and the Cultural Resources Office.

New telephone and computer cables, that provide direct telecommunications connections to the park-owned telephone switch and DOI network, and fiber optic cable were installed in the Mammoth area by the Electric and Telecommunications Shops. The new Local Area Network (LAN) system linked other NPS buildings to the Administration Building.

Growth and improvements to the park's alarm and security systems continued. Alarm systems were added to water and sewage treatment plants and several other buildings throughout the year. John Darr received formal training on "Radionics" alarm systems and, in turn, provided on-the-job training to other shop employees. The Telecommunications Shop continued to provide alarm systems support and programming to TWRS.

Office Services

Supervision of the Office Services operation was moved to Administration in October. Karen Winters transferred to Personnel and the vacated position was filled with two temporary employees as a "job share" position. The staff handled over 108,000 pieces of outgoing mail and 20,137 requests for information, recorded and filed 2452 pieces of correspondence, and copied and distributed approximately 3,500,000 photocopies.

Contracting and Property Management

The Contracting and Property Branch went through a major reorganization in 1996. The Procurement staff was placed under the direct supervision of the Supervisory Contract Specialist, and the Property and Supply Branches were combined under the supervision of the Property Utilization Specialist. These changes reduced the number of supervisors by two.

The location of the Property Office was moved into the Supply Center at Mammoth Hot Springs. Two positions were eliminated, and the FTE and funding for one of the positions was transferred to the Maintenance Division. The functions of quarters, furniture, gas cards, keys and badges were transferred to the North District Clerk in the Maintenance Division.

The branch automated several of its processes, for example, more ordering was accomplished through electronic means (GSA Fedstrips and Unicor). Data bases for tracking requisitions and orders were initiated, and new inventory systems were investigated. All employees received training on Windows 95 and the associated programs. The training was offered in Yellowstone.

Use of IMPAC Visa cards slowly gained popularity. There were 35 cards issued to park employees, and the IMPAC cards were used extensively by the Supply Center staff.

Contracting/Procurement

Over 6,000 requisitions were processed totaling approximately \$7.8 million as follows:

23 contract actions reported on SF-279s (one contract for \$151,800 was awarded to a minority-owned business)

7 new awards

4 supply contracts	\$ 461,202
3 construction	\$ 808,000
16 Contract Modification	\$ 176,386
18 Task Orders	<u>\$ 325,558</u>
	\$1,771,146

Agreements:

4 Interagency Agreements	\$ 796,750
4 Cooperative Agreements	\$ 492,105
Mods & Work Orders	<u>\$ 525,261</u>
	\$1,814,071

Small Purchases:

<u>Type</u>	<u>Quantity</u>	<u>Dollar Amount</u>
Purchase orders	1,224	\$2,372,557.55
Blanket Purchase Orders	45	373,535.11
Third Party Drafts	3,357	1,307,138.98
Imprest Fund	150	3,306.78
FEDSTRIP	206	186,318.00
Customer Supply Store	50	7,238.00
IMPAC - VISA	6	<u>604.50</u>
		\$4,251,093.92

Supply Center Activities

Total Sales - \$1,028,259. The annual physical inventory of the Supply Center reflected a loss of \$9,177, less than 1% of total sales.

The supply operation recycled 94 bales of corrugated cardboard, totaling 15,565 pounds.

Property Management Functions

In cooperation with Yellowstone's Excess Coordinator (Jerry Slaght), we acquired over \$1,400,000 worth of excess vehicles and equipment for the Region with approximately \$429,000 remaining at Yellowstone. We also acquired many other excess items including furniture, radio equipment, and electronic equipment

In cooperation with the Ranger Division, over 6,000 lost and found items were processed. The process involved donations to Community Hope, conversion of items to government property, and sale of remaining items at the annual GSA action.

	<u>NPS</u>	<u>TWRS</u>
Reports of Survey (DI-103)	58	17
Report of Excess Property (SF-120)	11	0
Report of Excess Property for Sale (SF-126)	35	26
Transfer of Property (DI-104)	12	0
Receiving Reports (DI-102)	15	0

Current Property Status

	<u>Number of Items</u>	<u>Value</u>
NPS	10,633	13,386,849.38
TWRS	3,180	5,007,323.51

In September 1996, GSA came to Yellowstone National Park to conduct a GSA auction. There were 166 items sold for \$105,938.

Financial Services

Fiscal 1996 brought a new face, Don Striker, to the financial management scene at Yellowstone. Striker, who installed the NPS' mainframe financial system as a consultant and helped design the park's local AFSII system as an Accounting Operations Center employee, joined the park in January, replacing Curtis Anderson who retired in '95.

After interviews with park managers, financial services customers, and branch employees, Striker and his team embarked on a major reorganization of the former Fiscal, Budget, and Programs Branch.

The reorganization strategy centered on primary objectives of focus on customer services and streamlining financial management procedures. Another primary objective was to develop the skills of branch employees and increase the team's morale. In addition to the cosmetic but visible changes like modernizing the Branch's name to *The Financial Services Branch* and the Branch Chief's title to *Comptroller*, the reorganization effected the following changes:

Striker formed three primary financial management teams:

- 1) Finance team - coordinated all commitment, obligations, and payment; audited, approved and reimbursed park employees; established and monitored all special accounts (e.g., reimbursable, donations, special use, fee collection, etc.); and computed park receivables, billed and mailed dunning letters to park debtors, and collected and deposited receipts.

- 2) Fee Collection team - certified and issued park passes and counted user fees, reconciled remittance sheets, and prepared all park deposits (in excess of \$3.5 million).
- 3) Budget team - established accounts and authorized money and FTE to these accounts, tracked the status of park funds, and ensured that all obligations were consistent with applicable laws, regulations, and policy. This team consisted of financial management personnel from the operating divisions.

The following were the FY96 budget figures for Yellowstone:

A. ONPS Base Funding	\$21,442,000
1. Base Funding	\$19,191,200
a. Regional Programs	\$ 113,800
b. Annual Base	\$16,595,400
c. No Year Base	\$ 2,482,000
1. Regional /Servicewide Projects	\$ 2,250,800
a. Cyclic Maint.	\$ 375,800
b. Repair/Rehab	\$ 947,700
c. Hazardous Waste	\$ 209,200
d. NRPP	\$ 404,000
e. CRPP	\$ 118,500
f. Water Resources	\$ 119,800
g. Collections Mgmt.	\$ 14,800
h. Volunteers-in-Park	\$ 10,300
i. Air Quality	\$ 10,500
j. Public Health	\$ 23,200
k. Challenge Cost Share	\$ 17,000
A. Construction/Housing Rehab	\$ 3,125,106
A. Federal Highways Support	\$ 1,282,200
B. Cost of Fee Collection	\$ 557,000
C. School Funding	\$ 750,000
D. Donations	\$ 166,699
E. Special Use Fees	\$ 800,543

CONCESSIONS MANAGEMENT

Staffing:

Chief, Concessions Management, GS-1101-14/3, Edna Good
Asst. Chief Concessions Management, GS-1101-12/5, Judy Churchwell
Conc. Spec. (Spec. Accounts/Projects), GS-1101-11/4, Mary Murphy
Conc. Spec. (Evaluation/Pricing), GS-1101-9/2, Barb Riley
Park Ranger (Conc. Spec.) (Eval/Compl.), GS-1101-11/2, Doug Lentz
Conc. Asst. (Ofc.Mgr.,Finan. Asst.), GS-1101-6/4, STF, Patty Kremer
Conc. Asst. (Clerk), GS-1101-5/4, PPT (3 days/week), Debby Young
Sanitarian, GS-0688-11/3, STF, Sara Roser
Engineer, GS-0830-7/1, Intermittent, Mary Hudson

FTE: 9

Budget:

ONPS:	\$340,000
USPS:	<u>23,200</u>
TOTAL:	\$363,200

OTHER: The TWRS capital account had been used in the past, on a limited basis, for travel or specialized materials in direct support of the special account projects. A GAO audit concluded that to be an improper use of accounts funds, and the practice has been discontinued.

Concessions Management:

General

1996 gross revenues earned by concessioners exceeded \$70 million collectively.. Concessioners' Annual Financial Reports were reviewed ensuring they were audited by a certified public accountant, and that franchise, building use, and special account fees were properly calculated. Any discrepancies or inaccuracies were noted prior to forwarding the reports to the Systems Support Office and Washington.

This division provided administrative oversight, identified and prioritized projects, and audited special accounts amounting to over \$4.6 million in 1996. The same level of oversight and management was required on a \$4.2 million cyclic maintenance program.

Approximately 260 formal and informal inspections were conducted in guest and employee facilities. Rates for each service and activity were approved in accordance with Service guidelines.

Winter operators, YPSS and Amfac were negatively impacted by the government shutdown early in the winter season; a total estimated loss of revenue in excess of \$1 million.

During 1996, all concessioners, with the exception of Amfac Parks and Resorts, Inc., received an annual overall rating of satisfactory. Amfac was rated unsatisfactory in operations as a result of poor visitor services related to an inadequate lodging reservation system.

Yellowstone Park Medical Services (YPMS) was notified by the Public health Service that funding for the year-round physician at Mammoth Clinic would be discontinued at year end. They began negotiations with the incumbent physician to remain at the clinic, funded by West Park Hospital. This will result in more than \$100,000 per year additional expense to the operation. A study was conducted by the National Health Service Corps which made a number of recommendations for increasing the economic viability of the clinic operation. These recommendations will be given consideration during the coming year.

The contract required that YPMS construct employee housing at Old Faithful during 1996. They completed site planning and were prepared to carry out the construction according to the contract. Because building sites are so limited at Old Faithful, we asked the concessioner to construct at Lake instead, reserving the space at Old Faithful for a multi-unit structure to be constructed by Amfac. The Lake construction is scheduled for 1997.

Projects accomplished with capital account funds included exterior paint of Lake Hospital, doctors' quarters and nurses dorm; remodel of X-ray office at Lake Hospital; remodel of operating room at Lake Hospital; purchase of furnaces for doctors' quarters; design of new employee housing for Lake; remodel of office and roof repairs at Mammoth clinic; remodel of doctor's quarters at Mammoth (vice Galen Warren); repaint interior of #14 Mammoth prior to turning it back to the NPS housing inventory.

Yellowstone Park Service Stations (YPSS) is operated under the terms of a Joint Venture Agreement, which expired on October 31, 1996. The parties to the joint venture signed a letter agreeing to continue to operate under the terms of the old agreement until the Hamilton Stores' contract expires on September 30, 1999. Because of the ownership of physical assets of the Joint Venture, the Solicitor has advised that issuance of a separate contract should be deferred until the HSI contract expires.

Upgrade/replacement of underground storage tanks is underway and EPA regulations will be met by the deadline in December 1998. No other major projects were funded during the operating season.

Hamilton Stores, Inc., (HSI) continues to provide satisfactory service to visitors. During this year, they began an effort to improve the types of merchandise sold in park stores, i.e., more items that are pertinent to the park and the environment. Sales figures indicate that this effort has been well received. The improvements will be extended to stores throughout the park. No major improvements were made to HSI facilities during this period.

Amfac Parks and Resorts experienced their first season as a concessioner in Yellowstone. Their well-intended centralization of the reservation system for all Amfac parks failed to prove adequate for visitor services for Yellowstone, resulting in well over 1,000 complaints about long delays, misinformation, reservation errors, rude personnel, credit card errors, and past due refunds. Amfac was convinced that such a system would not be effective for Yellowstone and made arrangements to return the reservation function to Yellowstone prior to the 1997 season. Because of the problems resulting from the reservation system, the quality of other services also suffered.

The longstanding Memorandum of Understanding on sales of Yellowstone souvenirs was rescinded, enabling Amfac more freedom on selection of merchandise. We were disappointed they did not improve the quality of their merchandise, but we expect major efforts toward improvement in 1997.

Amfac continued their excellent community involvement and support with donations to the local day care operation and the Make-A-Wish Foundation, major flooding in the Livingston area, etc.

Major accomplishments with capital account funds include: roofing, painting, and renovation of guest cabins parkwide; major repairs to historic structures; radon, lead, and asbestos mitigation; replacement of underground storage tanks; ADA upgrades; fire alarm system/emergency light upgrades; renovation of passenger buses, etc. In addition, funds were accumulated toward the construction of the new Old Faithful Snow Lodge.

At campgrounds, the following are examples of accomplishments: hazard tree removal at Madison; installation of sites for campground employees (Amfac); landscaping; installation of bear-proof storage boxes; new fire grates and picnic tables; remodel of comfort stations; installation of bulletin boards; parking lot overlay at Bridge Bay and upgrade of camper services building at Grant Village.

INTERPRETATION

Ron Thoman – Chief of Interpretation (GS-14)

Tom Tankersley – Assistant Chief of Interpretation, Personal Services (GS-12)

Linda Young – Assistant Chief of Interpretation, Non-Personal Services (GS-12)

Budget

In FY 96, the Division of Interpretation spent \$1,262,835 of the park's total budget. In addition to \$910,478 in ONPS funds and \$150,599 in fee enhancement funds, the division received fishing permit fee money (\$87,863), repair/rehab funds for Albright VC Wolves Exhibit (\$20,000), and Federal Highways assistance funds (\$93,895). The Expedition: Yellowstone! environmental education program spent \$47,179 in reimbursement fees collected in FY 96 and \$3,000 was spent in the VIP account in FY 96.

During FY 96, the Yellowstone Association (YA) continued to play a major role in support of interpretive operations contributing \$128,918. Included in these funds were \$29,285 for interpretive operations support, \$36,000 for naturalist assistants at West Thumb and Madison and \$63,633 in direct grants for such projects as exhibit production, publications, VIP housing, and summer interns and SCAs. In addition, YA handled \$113,830 for the division in restricted account expenditures resulting from donations and income to support Children's Environmental Education, Media/Product Development, the Yellowstone Today visitor information newspaper, ARTS Yellowstone, the Norris Ranger Museum, iImagine yellowstone, wolf interpretation, the Junior Ranger Program, and March for Parks.

Total funds expended for Interpretation in FY 96 from all sources equaled \$1,555,762.

Personnel

In FY 96, the division had 23 full-time positions (18 permanent and 5 term) utilizing 20.96 of the total 35.90 FTE. The division had 44 seasonal positions (14.94 FTE) including 40 summer, 1 media and planning, and 3 environmental education positions.

In addition to NPS staff, the Division of Interpretation benefitted from the service of 23 volunteers and 46 other positions including 30 YA sales clerks, 7 SCAs, 1 Kodak employee, 1 Artist-in-Residence, and 7 student interns. These volunteers and YA employees, working directly in the various interpretive functions of the park, constituted an additional 10.57 FTE .

During the course of the year, the final stage of Ranger Careers resulted in promotions to GS-09 for Bob Fuhrmann, Tom Hougham, Jeanne Johnson, and Carol Tepper. Also in FY 96, two district supervisors transferred (Dan Hand to Coulee Dam Recreation Area and Matt Graves to Olympic National Park), one district supervisor resigned (Roger Anderson), the Assistant Chief of Interpretation for Support Services transferred (Greg

Kroll to Arthur Carhart National Wilderness Training Center), and the division's Administrative Assistant (Lindsay Robb) transferred to the Yellowstone Finance Office. Tom Farrell was hired for the Old Faithful District Interpreter position, Brian Suderman for Mammoth, Mary Wilson for Grant, and Rose Gallagher filled the Administrative Assistant vacancy.

Branch of Personal Interpretive Services

"Back to Basics", compelling stories, and honing the focus on primary park resources/controversial issues continued to shape all aspects of interpretation in Yellowstone. As applied to personal interpretive services, these philosophical directions led to an in-depth analysis of each developed area's (i.e., "district's") primary resources and associated compelling stories, and all formal interpretive programs addressed major identified resources, issues, and compelling themes. Additionally, staffing visitor centers, museums, and contact stations continued to be a high priority in 1996 along with conducting roving interpretation in high visitor use areas. We believe that focused interpretation is the best approach to communicating the most important and fundamental values of Yellowstone National Park to its visitors. This is especially important in light of the nature of the "average" Yellowstone visit which lasts just slightly more than 24 hours.

Restoring half-day and full-day hikes such as the Climb Through Time (Specimen Ridge), Mt. Washburn Hike, and Pocket Basin Walk awaits the development of a fee interpretation program. These activities serve a small but enthusiastic and dedicated visitor audience; fee interpretation is the most viable approach to providing these activities given present and likely future budget constraints.

(Note: Due to Yellowstone's FY 96 budget shortfall, a decision was made to close all visitor facilities in the Norris area for the 1996 "summer" visitor season. This closure included the Norris Campground, Ranger Museum, and Geyser Basin Museum. Norris Geyser Basin parking and trails were open to visitors but uniformed NPS presence was minimal to nonexistent.)

Detailed visitor contact information is available in the FY 96 Annual Interpretive Program Report. Briefly, total visitor contacts tallied 2,235,150. Of these, 232,827 constituted attendance at all formal ranger-led activities or programs (park visitation for 1996 totalled 3,030,472).

Environmental Education

In FY 96, the park's residential environmental education program, Expedition: Yellowstone!, entered its eleventh year of operations and its third year as a fee-based program. During the four months of operations, over 750 students, parents, and teachers participated in the three and four day programs in the Lamar Valley.

The Junior Ranger program, first implemented in 1992, served over 11,000 children between the ages of five and twelve. New in 1996 was a program for five- to seven-year-olds (supplementing the eight to twelve-year-old program). This new program proved very popular. In 1996 the donation requested for participation was raised from one to two dollars.

The children's summer day camp program, Exploring Yellowstone, for children residing in Mammoth, Gardiner, Corwin Springs, Emigrant and Cooke City, grades K through seven, completed its second year of operations. Twenty-three sessions were offered, and 69 children participated. The program was once again funded through an \$8,000 school grant and a \$10.00 registration fee.

An Earth Day celebration was held on the parade grounds at Mammoth with 15 educational stations attended by over 300 local students.

National Park week programming reached over 400 students in the communities of Livingston, Bozeman, West Yellowstone, and Big Sky.

The Requested Educational Services program completed its second year. One-hundred and seventy-nine programs were presented to a diversity of groups, serving 11,339 individuals.

Ellen Petrick-Underwood began work on an "Exploring Your National Parks Kit" project which will feature Yellowstone. This is in conjunction with the National Park Foundation, Eureka Vacuum company and Target stores. In the fall of 1997, 30,000 kits will be distributed to schools across the country, with 60,000 more kits to be distributed over the following two years.

Non-Personal Interpretive Services

Throughout 1996, "Back to Basics" was the guiding principle in prioritizing work on nonpersonal interpretive services such as publications, wayside/trailsides exhibits, visitor center/museum exhibits, audiovisual media, and advanced interpretive technologies. Total cumulative visitor contacts totaled over 8 million, which we consider a very low estimate. (The figure factors in multiple visitor encounters with exhibits, publications and automated audiovisual programs. Methods of measuring all such contacts are far from complete and/or available within constraints of staffing and budget.) Surveys conducted by Dr. Gary Machlis of the NPS Visitor Services Project indicate that the vast majority of Yellowstone visitors use nonpersonal interpretive services as their primary means of acquiring information, orientation and interpretation/education.

Fifty eight interpretive/educational publications were produced including four issues of the park newspaper *Yellowstone Today*, seven self-guiding trail brochures, foreign language translations of basic park safety, regulatory and services information, various area guides, and specially targeted site bulletins (e.g., such controversial issues as wolf reintroduction/status and bison management). With the Yellowstone Association, we

experimented with a modified park newspaper sold in areas outside the park in an effort to provide better pre-trip planning information for visitors in the "gateway" communities

A series of new information/orientation exhibit panels were installed at trailheads leading into the Mammoth Hot Spring Terraces' trail system and the Upper Terrace Loop Road, and planning and production work was completed on 25 trailside exhibits for Norris Geyser Basin and the Norris Campground access area (these were delivered to the park in November, too late for installation in 1996). Planning/design of exhibits dealing with wolves and the predator-prey dynamic (replacing existing noninterpretive exhibits on the second floor of the Albright Visitor Center) was well underway and involves a production partnership with the Museum of the Rockies in Bozeman, Montana. Another partnership with staff at the Buffalo Bill Historical Center in Cody, Wyoming aimed at developing an exhibit on bison natural history and the controversial issues surrounding their management began in the fall of 1996. We anticipate this collaboration will lead to a new exhibit for public viewing during the summer of 1997. Phases II of trailside exhibit development at the former Children's Fire Trail (re-named the All Person's Nature Trail) began. The goal is to use new technology to produce exhibits less expensively while incorporating tactile devices, spotting scopes, outdoor "notebooks", and other innovative devices designed to make this Yellowstone's first fully accessible self-guiding nature trail.

The Audiovisual position, function and space was reorganized. Considerable time was spent inventorying the audiovisual cache. So many errors were discovered that the task of sorting through old inventory lists and matching existing equipment continued at the end of the fiscal year. The audiovisual office established at the time of Ron Harvey's move into the Division was dismantled. A substantial amount of the equipment and other items supporting the audiovisual function in Interpretation was moved to Jim Peaco's control and management; the remainder of the cache was placed in Hank Coleman's domain (Telecommunications). Jim and Hank collaborated in providing audiovisual services for major parkwide events as the Audiovisual Technician position was lapsed for FY 96. Demand for photographic services continued on an upward trajectory; special efforts were made to document ongoing wolf reintroduction and bison management activities.

Artist-In-Residence Program/Imagine Yellowstone

In the recent past, division Chief Ron Thoman decided the future of any arts program in Yellowstone hinges on its ability to be completely self-sustaining. Dwindling resources simply do not allow us to pursue efforts that are not somehow basic to providing orientation, information, and interpretation to the widest audience of Yellowstone's visitors and the general public.

In 1995, Sidney Wildesmith, an artist based out of Santa Fe, New Mexico, joined in a Memorandum of Agreement with the park and his National Park Touring Artists Program (NPTAP). Yellowstone had agreed to be one of the pilot parks for the program with our portion based out of the Canyon Visitor Center. In 1996, Sidney continued to provide his

own housing in the form of a motorhome and rented space in the Canyon employee housing area. He continued to offer art courses and to use most of the Canyon VC auditorium as a work area, an area to begin and end workshops, and as exhibit space for on-going artwork. As requested in the MOA, he provided free art-oriented walks and evening programs and these offerings were advertised in the park newspaper along with other interpretive program listings.

In both 1995 and 1996, Sidney failed to create an original work on Yellowstone to be printed in poster format and sold with proceeds of sales to return to Yellowstone to support art education efforts. This requirement was spelled out clearly in both MOA's.

A retrospective of *Imagine Yellowstone*, a series of student art exhibits, was displayed in the Canyon VC exhibit room. Dave Cowan created the display of selected student art, providing visitors with provocation and interpretation on a variety of topics pertinent to the park such as "endangered species" and the effects of the "fires of 1988." Dave completed a full color retrospective art catalog of the entire *Imagine Yellowstone* program. The catalog was sold during 1996 with proceeds supporting art and education programs in Yellowstone. A donation box accompanied the exhibit with a total of just under \$3100 for the summer season.

Yellowstone Association

The Division participated in the Yellowstone Association's Strategic Planning effort. Two specific multi-day workshops were conducted by consultant/facilitator Michael DeBrosky and involved member of the Yellowstone Association Board of Directors, YA staff, the Chief and Assistant Chief of Interpretation, and Superintendent/Assistant Superintendent of Yellowstone National Park. During these workshops, the mission and long range goals of YA were established. Fundamentally, YA remains an organization dedicated to assisting the National Park Service's interpretation and education efforts in Yellowstone. Long range goals will describe the many ways in which YA will perform this role and the infrastructure needed to accomplish its mission (e.g., office/warehouse space, additional staff, training). Full development of long range goals will begin in 1997.

MAINTENANCE

Tim A. Hudson - Chief of Maintenance (GS-14)

Jack E. Roberts - Assistant Chief of Maintenance (GS-13)

The Maintenance Division's workload in 1996 again focused on the park's major infrastructure problems - roads, utility systems, buildings, and housing. The spring was extremely wet and late, and the opening of the park roads was delayed because the budget did not allow any overtime. The opening/closing dates were:

April 19	West Entrance opened to wheeled vehicles
May 3	South opened to wheeled vehicles
May 13	East Entrance opened to wheeled vehicles
June 14	Beartooth Pass opened to wheeled vehicles

The late opening affected virtually every facet of the operation, especially roads. Since the roads did not open until later than normal, the patching was also delayed, and most of the roads were not patched until after the main visitor season. The resultant road conditions were extremely bad, and it was not until mid-August that patching was completed.

Work with hazardous materials is still underway although we are making progress with the unknowns, and the staff is doing an excellent job of monitoring their day-to-day wastes. Over 40 drums of old paint thinner were disposed of because we are reusing the thinner with the use of a still.

The lack of a viable cyclic maintenance program is still increasingly evident, especially in roads. If funding does not increase, the new roads we are constructing with Federal Lands Highway Program (FLHP) funds cannot be properly maintained. Aside from major failures, little or no preventative maintenance is occurring.

The solid waste program continues to make strides with ongoing partnerships with the cities and counties in southwest Montana. The park is actively participating in the Headwaters Cooperative Recycling Project and is leading the way in the composting study for wastes disposal in the area.

Due to the cooperative efforts of the park, the Montana Department of Environmental Quality, and the Department of Energy, a "Greening of Yellowstone" workshop was held in West Yellowstone in October 1996. This brought sustainability concepts to the local area and targeted five areas of improvement to be coordinated with the local communities. A highlight of the conference was the dedication of the recycled plastic viewing platform at Old Faithful. This 33,000 square foot platform was approximately 70% completed at year's end and will consist of plastic lumber the equivalent of over four million milk jugs. The project was completed because of a partnership with Lever Brothers Corporation, the National Park Foundation, Eaglebrook Products, and the

National Park Service. Lever Brothers donated the plastic boards on a cost share basis, while Yellowstone provided all of the labor and structural materials.

Fiscal Operations

The Maintenance Division operated from a number of fund sources as follows:

ONPS	\$7,396,400
ONPS No Year	1,300,334
Repair/Rehab/Cyclic	1,529,700
Day Labor (404)	169,327
Dept. Of Energy (454)	114,273
FLHP (day labor only)(595)	395,200
School Maintenance (610)	134,000
Housing Initiative (408)	1,055,502

Total FTEs - 211.9

Maintenance FTE Ceiling - 218

Roads

Norris Hot Mix Plant

The following quantities of asphalt were manufactured and used throughout the park for various road repairs, overlays, and curbing: 4,824 cubic yards of MC-800, 1,857 cubic yards of AC-10, and 1,480 cubic yards of SC-250.

Hot Mix crews (truck drivers and equipment operators) assisted Park County, City of Livingston, and Montana State Highways with erosion control and bank stabilization of the flooding Yellowstone River during late May and early June. The main efforts were along Highway 89. Four 10-yard dump trucks and one dozer were dispatched to mutual aid call. Crews were involved in storm debris cleanup along the Gibbon River. An attempt to run contaminated soil (fuel oil) through the hot mix dryer was made, and approximately 100 yards were dried. This process failed and we continue to seek alternative ways to deal with contaminated soil.

Special Projects Road Crew

There was no chip seal work performed this year due to a lack of regional funding, however, this crew performed work on park roads; grader patching two miles between Mammoth and Norris, one mile in various locations from Norris Junction to Madison Junction, and 3/4 mile between Lamar and the Northeast Entrance. Crews cut out and patched between Mammoth and Gardiner and overlayed one mile of road in this same section. The crew removed approximately 1,000 yards of material to establish a gun platform for avalanche control on Sylvan Pass. Through a cooperative effort, this crew paved the Gardiner airport; Park County provided material. The crew hauled 400 tons of

aggregate from Duck Creek and approximately 1,200 yards of reject crusher material from Sylvan Pass-all from remaining Federal Highways contracts.

Special Projects crews performed 350 miles of spring opening duties including a portion of the Beartooth Highway.

A highway striping was awarded to Mark Rite Lines of Billings, Montana. Roads that were striped included Swan Lake to Norris, Northeast Entrance to the Montana State Line, Roosevelt Arch to Mammoth Terraces, and South Entrance to West Thumb.

Fleet Maintenance

1. New vehicles and equipment purchased:

30 snowmobiles	\$126,198
22 light vehicles	\$481,523
11 heavy equipment	\$643,420

2. Excess Equipment, Light Vehicles and Heavy Equipment Program

A. Light Vehicles: (sedans, pickups, etc.). Yellowstone acquired for the Park Service 16 light vehicles valued at \$194,052.

B. Heavy Equipment: (2 10-yd dumptrucks, 2 forklifts, dozer, garbage packer, 20' trailer). Yellowstone acquired seven pieces of heavy equipment valued at \$342,970 for the NPS.

The value figure listed is the actual cost when purchased new; the adjusted value would be substantially less.

2.. Alternative fuel project: Truck In The Park

- cooperative effort between several organizations
- 26,228 miles logged on the biodiesel truck utilizing 100% rapeseed oil with ethyl esters
- participated in regional demonstration displays
- in-depth reports looking at the pollutants released after combustion, very positive.

2. Snowmobile/bio-synthetic 2-cycle motor oil project:

- cooperative effort between several organizations
- first phase of demonstration project conducted during the winter of 1995/96
- Concoco oil was utilized during this phase
- initial analysis of repair records showed Yellowstone snowmobiles experienced less failure from fouled plugs, burnt pistons/cylinders than in previous years.

3. One snowgroomer had petroleum-based oil removed from the hydraulics and hydrostatic systems and replaced with an environmentally safe vegetable oil. This pilot oil will be monitored and evaluated to be used in other park equipment.

District Operations

Mammoth

- hauled 240 tons of hay for the Ranger Division.
- crew participated in grader/patching/laying 2,500 cubic yards of MC-800 on the Mammoth to Norris road.
- hand-patched Mammoth to Norris road with reject/reclaimed asphalt four times prior to getting MC-800 material in July.
- crew participation in repairing of the major spring washout on the old Gardiner high road.
- drilled/blasted/rehabbed the Undine Ski Hill area as scheduled.
- flood control, mud control, trail work, and rehabbed the following problem areas:
 - Clematis Creek
 - Cooke Pass Pond/Lake
 - Northeast area mud slides
- repair of major washouts on the Blacktail Road.
- flushed and thorough cleaning of all drop drains in the Gardiner Canyon.
- overlay of Sunken Fill area (above Africa Lake).
- crew participation in the grader patching/laying 500 yards of MC-800 on the Tower to Northeast road.
- crew participation in the grader patching/laying 250 yards of MC-800 on the Norris to Madison road.

Norris

- new or repainted signs throughout the Norris Geyser Basin.
- four foot stop signs installed at Norris intersection.
- boardwalk work - replacement of boards, stairs, and railings. Installed over 200 new kick logs along trails.
- closed and rehabbed old trail in geyser basin and made new trail.
- three hundred hazard and downed trees removed from geyser basin and campground
- all Norris area road signs straightened, repainted posts, and replaced worn and bent signs.

Canyon

- repaired and modified TW corral area (Fuller) sewage lift station.
- repaired and replaced motors and pumps at Chittendon Bridge raw water pump station.
- worked on items from FY95 sanitary survey punch list.
- new electrical service to "P" loop sewage lift station by electric shop.

- new electrical service to maintenance buildings #815 and #821 by electric shop.
- replacement of valves at Uncle Tom's sewage lift station.
- repair of three fire hydrants.
- oversight of Wastewater Treatment Plant contract.
- improved road to Chittendon Bridge pump station.
- road ditching and shouldering from Canyon Junction to South.
- installation of new barricade between Chittendon Bridge and Otter Creek.
- new accessibility ramp at visitor center.
- improved access to amphitheater.
- landscaping at visitor center.
- major cleanup of maintenance compound.
- site improvements in trailer park.
- removal of two old wayside exhibits in Hayden Valley.
- apartment carpeting.
- exterior painting of two comfort stations.
- interior painting of building #801 and new roof put on by contractor.
- removal of dormers on building #803.
- new rear landing and steps for building #804.
- new propane heater for Blister Rust Camp mess hall.
- propane heater relocations in building #810 by contract and Mammoth plumbing shop
- construction of window shutters.
- consolidation and removal of hazardous waste with help from Mike McCoy.
- rock wall and railing replacement on Brink of Lower Falls Trail by Americorp, Montana Conservation Corps, and YNP trail crew.
- trail stabilization on Uncle Tom's and Red Rock trails.

Lake

Personnel shortages coupled with relentless emergency conditions quite simply limited the number of special projects begun or completed.

Extreme snow depths compounded and slowed the opening process (getting to facilities, valves, pipelines, etc.) of buildings and utilities. Several major water main failures further complicated and slowed the opening process and stretched personnel resources tight.

When the weather finally broke, warm conditions brought their own curse in the form of widespread flooding. From three to seven people worked the majority of each and every day well into summer preventing or repairing flood damage in the marine basin and along roadways, especially the section from Sylvan Pass to the East Entrance.

By the time emergencies began to recede, we were behind on scheduled routine maintenance of roads and well into the visitor crunch on facility care, wastewater treatment, and solid waste removal.

Continuous support work for projects for the National Weather Service, Air Quality Board, National Geologic Survey/University of Utah, Yellowstone Center for Resources, and two major road contractors eliminated even more discretionary time.

The rather bumpy start to the season mandated a conservative approach to what projects could be undertaken, and so strategy was adjusted to concentrate on finishing old projects first and then assessing what time remained before moving on to new projects.

Old business included:

- major repair work done on Sylvan Pass guardrails and cables.
- clearing and hauling of large amounts of talus and slide debris from the Sylvan Pass area to increase lane width and improve drainage.
- continued rehabilitation work in the Fishing Bridge Campground to the point of being within a couple of days of project close-out.
- completed "mudroom" additions, sidewalks, and all landscaping for building #711 .

New projects undertaken included:

- construction of two prototype dock sections placed and now being tested at Plover Point which will hopefully spawn facility replacement lake-wide.
- complete strategic support for the wolf relocation program at Trail Creek encompassing transport of hardware, construction of holding pens, continuous transport of personnel and animals associated with the project along with routine food transport throughout the holding period.
- flood damage repair to Gull Point Drive expanded into an improvement of the harbor approach area and establishment of a new picnic site at the mouth of Bridge Bay harbor.
- reconstruction of the service road to the Lake water reservoir.
- current rebuild of all aeration rotors at the Fishing Bridge wastewater treatment plant.

Grant

Road crew replaced 168 feet of damaged guardrail and 5 end units on Craig Pass; the rails had not been repaired for several years.

A new loading ramp was constructed in the pit behind the ranger station for loading sand for the fall and spring sanding operation. With the sand closer to the shop it will make for a more efficient operation.

The crew removed all of the old asphalt from the approach/parking area of the service station and replaced it with crushed asphalt. This repair has worked out very well in eliminating all the potholes.

The building/project crew completed the handicapped walkway at the picnic area comfort station. The picnic area and the boat ramp comfort stations have had the partitions removed along with the fixtures and are ready for new upgrade to handicapped units.

Along with this upgrade, all the material has been delivered to replace the roof on the boat ramp comfort station.

The crew has also completely redone the inside of the storage building (#637) which has made it a much more efficient storage area for lumber, tools, garbage bags, etc.

The roadside/custodial crew completed painting 12 vault toilets with the new colors. This only leaves 2 unpainted in the Grant Maintenance District. They have also stained all the picnic tables and bumper logs at the Divide Picnic Area along with staining all sign posts throughout the Grant District. We have also painted all the wooden rails at the visitor center and the West Thumb information center.

In addition to the above listed items, the crew was busy saving and repairing over 300 feet of road shoulders on the South Entrance road near Dogshead trailhead, over 800 feet on Craig Pass, over 350 feet east of West Thumb Junction at the small causeway, and constructed a 50' x 6' log wall on the road east of West Thumb to hold the road and parking lot from giving away due to the heavy runoff this spring. We also did a lot of clean up of the Grant area and old incinerator area.

Old Faithful

- base construction work and landscaping on the Fountain Paint Pots and the Midway Geyser Basin vault toilet installation.
- shoulder/ditch work and repair (8 miles).
- hazard tree removal (spring 1996 "Big Blow Down"). Also cut and split 30 cords of fire wood for the visitor center and warming hut.
- log work/repairs:
 - a. log rail replacement - Biscuit Basin Firehole Bridge rails (60 ft).
 - b. log curbing replacement - Hamilton Store Photo Shop area (200 ft).
 - c. log rail construction - Upper Geyser Basin (300 ft.).
 - d. accessibility picnic site - Old Faithful, east lot picnic area. Poured a concrete sidewalk and pad, installed a picnic table and a fire grate.
- striped (painted)
 - a. Little west parking lot behind the visitor center.
 - b. all the crosswalks in the Old Faithful area.
 - c. all the directional arrows on the one ways.
- painted and stained the Emergency Services Building (exterior).
- remodeled/upgraded quarters
 - a. Trailer #73 - painted (interior), new floor coverings, and new plumbing.
 - b. Four-plex old quad #531A and #531D - Painted (interior), new counter tops, replaced patio doors with 3'0" doors and windows, upgraded plumbing and new floor coverings.
- relocated Trailer #43 down to South Entrance and Trailer #38 out to West Yellowstone.
- stained the exterior of three-plex building #258.
- landscaped the grounds around the six-plex building #496.

- constructed and poured the concrete site for the wastewater treatment plant's Muffin Monster, (comminutor).
- repaired the sewer line break on Iron Springs Creek.
- repaired the sewer line plug/break located between the lodge and the visitor center.
- repaired the water main break behind the Lower Basin Hamilton Store.
- painted garbage cans and lids.

Madison

- built new roofs on the West Yellowstone government quarters buildings #459, #456, and #454; basically the original roofs and in a serious state of disrepair.
- put down approximately 1,500 yards of asphalt as grader patches on the Norris road in conjunction with the Mammoth Special Projects crew; project lasted approx. two weeks and many of the worst stretches were improved.
- removed eroded soil from the Seven Mile Bridge culvert drainage and returned the drainage to near normal configuration; culvert was cleaned and area rehabbed. Project went through compliance clearance prior to the work.
- rebuilt culvert drainage system and installed a concrete headwall on a washout located on the Seven Mile Bridge hill on the West Entrance road. This has been washed out for several years and the erosion was significant.
- laid out new shoulder material on approx. five miles of roadway on the Norris road.
- completed approx. three miles of ditching to improve drainage on the Norris road.
- started on the rehab of the Madison picnic area and surrounding trail system. A boardwalk bridge was installed (Yellowstone Boardwalk crew) as part of the accessibility focus and several stretches of the old asphalt trail was removed. This is part of an ongoing project involving interdivisional cooperation.
- clean-up and reorganization of the Mesa Pit area.
- started on the clean-up and removal of roadway deadfall on the West Entrance road.
- installation of new propane generators for the Bechler area in conjunction with the West District plumber, electrician, and carpenter.

Landscape Architecture

Design

Staff made design recommendations for the Old Faithful Snowlodge building and landscape architectural plans.

Planting plans were developed and implemented for the new concessions duplex in Mammoth

Yellowstone Institute cabin replacement at the Lamar Buffalo Ranch continued. Plans were developed and implemented to address circulation, landscape issues, and solar photovoltaic use. The project clearance process was initiated and completed. Work continued on Park Design Standards. They should go to print in 1997.

Chief, Branch of Landscape Architecture, was a member of the parkwide road team. Design recommendations for each road segment were reviewed by the team. The landscape staff provided design work for signing, revegetation, and parking area design for each road segment under construction.

The city of Livingston and Park County were assisted in their efforts to evaluate the Yellowstone River for flood control measures and revegetation. Assistance was also provided to the East Rosebud Lake Ownership Committee (Montana) for fire restoration efforts in the cabin area. Fire revegetation assistance was provided to Mesa Verde Park.

Resource Teams

Chief, Branch of Landscape Architecture, continued to serve on the Resource Council. Staff members served on resource teams for Exotic Plant Management, Opal Terrace, Turbid Lake Road rehabilitation, and Research Permit Panel.

Sketches were developed for Opal Terrace, and a revegetation plan was developed for the Turbid Lake project.

Cultural Landscape Revegetation

Thirty-five, 16-foot cottonwood trees were planted in the Mammoth historic area to replace ones that are becoming hazards. Trees were planted on Officer's Row, Soap Suds Row and in front of Building 70. These trees were started as cuttings taken from the Officer's Row trees in 1989 and grown at a contract nursery in Hamilton, Montana.

General Seed Collection

Seed was collected for various proposed revegetation projects in the park and is continually collected for the parkwide seed bank. Seed is collected at least three years in advance for major revegetation projects. Projects requiring collecting in 1996 were: Turbid Lake road rehab, Little Thumb Pit, Dry Creek Pit, Ice Lake Pit, Old Faithful Snow Lodge, Fishing Bridge Campground, and Mammoth. Seed was dried, bagged, and sent to Bridger Plant Materials Center for cleaning and further production as part of the parkwide seed bank process. Cleaned seed was distributed for several small projects.

General Revegetation Projects

Revegetation projects included: seeding of Fishing Bridge campground; seeding and mulching of Madison picnic area, distributing plants from the nursery to the new duplex in lower Mammoth, and seeding and mulching around the duplex.

Stephens Creek Nursery

This facility serves most of the revegetation projects in the park.

Seventy aspen trees and nine willows were dug up from the Old Faithful area and planted at the nursery. These will be grown for several years and then transplanted to the completed, new Snowlodge site.

Cuttings from Federal Highway Administration (FHWA) projects were propagated at the nursery. One thousand seven hundred eighty four cuttings were made, of which five hundred twenty-nine successfully rooted. Thirty of these plants were transplanted to road projects. Four hundred ninety-nine were potted and remain at the nursery until the respective road projects are complete.

Plants were salvaged from the Madison to Fountain Flats road segment. A portion of these plants were put into pots and others into the ground at the nursery.

Sign Program

The Sign Shop released 680 signs. This includes wood routed, aluminum baked, and ready-made aluminum signs. New signs were made and installed on the Madison to Biscuit Basin road project. Numerous road construction signs were made. The shop for the computerized router was completed. The router and other equipment were set up and backcountry signs were produced. The Livingston fee sign was assembled and installed.

Federal Highway Administration Road Projects (FHWA)

Coordination of park-wide Federal Lands Highway Program (FLHP) budget requests - 6 divisions, 30 people and 3 interagency agreements, were involved in budget requests for participation in 16 different road segments of road projects (Overlay and 3R). The three million dollar project support budget was coordinated and evaluated by the Chief, Branch of Landscape Architecture, and sent to WASO for approval.

Parkwide Road Project Landscape Coordination - The Chief, Branch of Landscape Architecture, provided parkwide landscape representation on the Road Team with involvement in planning, design, construction, and preparation of overall project coordination. This included involvement on landscape decisions and direction with RMR, DSC, and FHWA personnel. Member of Peer Review Committee to evaluate proposals for the region.

FHWA Road Project Design

Northeast Entrance (4R) - Standard pullouts, parking areas, Northeast Entrance Station area, trailheads, and picnic areas were taken from concept stage through final design. Construction details were developed.

Fishing Bridge to Indian Pond (reconstruction) - Preliminary designs were developed for circulation, parking, and pedestrians in the Fishing Bridge developed area.

Madison to Norris (reconstruction) - Preliminary designs of pullouts, parking and picnic areas were completed. Various road alignments and road widths were studied.

Madison to Fountain Flats (reconstruction) - Final design was completed and approved for pullouts, parking areas, and picnic sites. Details for the bid package were completed. The project was awarded to HK Construction of Idaho. Fall of 1996 contract work included: clearing and grubbing of trees, stumps and topsoil; surveying and staking of slopes and clearing limits; installation of culvert pipes; blasting of rock-cut faces and ditch-lines; removal and salvage of masonry/head/endwalls and wingwalls on Nez Perce bridge. Other work on Nez Perce bridge included removal of old deck and forming/pouring of new deck. The road was prepared for oversnow vehicles.

FHWA Road Construction

The park provided one to two landscape architects per construction project. These staff members monitored the construction job sites for resource protection, acted as the liaison between the Federal Highway engineers and the park, gave resource orientations to contractors, insured that specifications were met and covered many unforeseen project occurrences for two road construction projects on the East Entrance road and one on the Madison to Old Faithful road.

Lake Butte Overlook to Sylvan Pass (reconstruction) - Job completed. Structural repairs were made on a large mudslide that washed out on the road. Thermal wetlands were restored at Stinky Pond. Dry laid retaining walls and landscape boulders were installed at Lake Butte picnic area. The landscape architect oversaw installation of paved waterways, log curbing, paving, and striping. This project received the 1996 "Most Aesthetically Pleasing Project" award from the U.S. Department of Transportation, Federal Highways Administration, Western Lands Federal Lands Highway Division.

Indian Pond to Lake Butte Overlook (reconstruction) - The project landscape architect assisted in setting construction limits and oversaw topsoil removal and replacement. Simulated stone, retaining wall form-liners were produced with careful time spent on design details. Construction of the concrete simulated stone, retaining walls followed. Rock sculpturing of Steamboat Point and other rock cuts occurred.

Madison to Biscuit Basin (reconstruction) - This segment of road reconstruction underwent final inspection July 1, 1996. The project included completion of: paving and striping operations, masonry construction of headwalls, curbing, edging and walls, slope shaping, topsoiling and landscape logs, seeding and mulching, installation of traffic and directional signs.

FHWA Road Project Seed Collection

Seed was collected for all current road projects and five years in advance of future road segments. These projects include Fishing Bridge to Lake Butte, Madison to Fountain Paint Pots, Madison to Norris, Tower to Northeast, and Bridge Bay to West Thumb. The

seed was dried, bagged, and sent to Bridger Plant Materials Center for cleaning and further production. Forty seed accessions were selected and put into further field production.

FHWA Road Project Revegetation

Lake Butte to Sylvan Pass - One week was spent planting trees, seeding slopes and planting salvaged plant material from the Stephens Creek nursery. Reseeding was completed on mudslide slopes, newly created false berms and fill slopes. Ninety-three pounds of seed was spread over nineteen roadcuts, berms and fill slopes, picnic areas, pullouts and trailheads.

Madison to Biscuit Basin - One week was spent on revegetation of this project. One hundred salvaged plants and cuttings from the Stephens Creek nursery were planted in highly visible areas along the finished road. Another two hundred and fourteen small trees were transplanted to bare areas along the road. Ten pounds of seed was spread in four areas where minor disturbances had occurred, including thermal basin parking areas, pullouts and trailheads.

Trails

West District Trail Crew

Pebble Creek: truss foot bridge decked and completed.

Old Faithful: replaced rotted Mystic Falls overlook cribbing with rock wall.

Daly/Black Butte Creeks: 13 miles of trail maintenance on surrounding trails. Also constructed a 22 ft turnpike. Several sections of rut and trail elevation.

Fawn Pass: 4 miles of trail maintenance; 650 yards of new trail. Twenty foot stringer bridge.

High Lake Trail: 6 miles of trail maintenance on surrounding trails. Twenty foot decked stringer bridge with rock wall abutments. Diverted spring and constructed 80 ft causeway to eliminate bog/erosion section.

Bechler: 14 miles of trail maintenance on Bechler Canyon and river trails. Did quick fix of problem areas on these trails. Did experimental 100 ft section of "meadow stuffing" to explore solutions for the Bechler Meadow ruts.

North District Crew

Hellroaring and Coyote Creek: Drainage maintenance on Hellroaring River Trail, Coyote Creek, and Buffalo Plateau trails. Completed 300 ft reroute with meadow restoration

near Hellroaring Bridge and replaced two rotted bridges near the Hellroaring boundary with muckways, culverts, and causeways.

Warm Creek Pass: constructed 450 ft reroute involving two switchbacks and several rock walls.

Miller Creek: healed the most tortured piece of trail in Yellowstone. Replaced 250 yards of rotted bog bridge, inverted switchbacks, and mess with 50 yards of straight trail and a 100 ft turnpike.

Lamar River and Pelican Cone: Removed unnecessary rotted bridge near Cold Creek, cleaned drains from Cold Creek to Mist Creek Pass and dug drains on Pelican Cone Trail

South District Crew

Mammoth Area: dug drains, built new abutment for Wraith Falls Bridge, constructed water bars and retainer bars on Lava Creek Trail, and hauled gravel for Boiling River Trail.

Black Canyon of the Yellowstone River: drainage maintenance on Blacktail Creek and Yellowstone River trails. Constructed rock causeways, drains, and retainers to reconstruct unsafe slickrock area near Crevice Creek. Installed handrail on Blacktail Cabin footlog.

Lake: Maintenance on Elephant Back and Delacey Creek trails, and a 400 ft reroute was constructed at Nine Mile trail head to connect to new parking area.

Dogshead trail: retainer bars, lots of fill, water bars, some crib wall, and several short reroutes. This trail is now almost in a maintainable condition.

Snake River: Maintenance from trailhead through Heart Lake to Snake River Canyon. Significant reconstruction of Snake River Canyon Trail by cutting through mudslides, building

Combined Crews

Mountain Creek: constructed three separate reroutes; two at 400 yards each and one 1,500 yards. Performed complete meadow restoration for the long reroute and one of the short ones.

End of season projects: began reconstruction of retaining wall at Boiling River trailhead with 100 square foot sound rock wall, completed installation of removable railing at Brink of Lower Falls overlook, built temporary support for Gardiner River Bridge (Lava Creek Trail) to hold it for the winter; completed rock work on Warm Creek Pass reroute; patched washed out rock wall at Tower Falls.

Volunteer Cooperating Groups

National Trails Day Volunteers: construction of 2,640 linear feet of new trail from YACC Camp to Mammoth.

National Civilian Community Corps: 4,000 linear foot reroute, 2,640 linear foot abandoned trail rehab on Grebe Lake trail. One hundred-fifty square foot crib wall at Artist Point. Repositioned boardwalk at Pelican Creek Nature trail.

Youth Conservation Corps: 900 linear foot reroute, 900 linear foot abandoned trail rehab at Artist Paint Pots, 2,500 linear foot reroute, 400 linear foot abandoned trail rehab on Bechler River trail. Drain installation, tread repair, 110 square foot retaining wall on Mt. Washburn trail. Four thousand linear foot reroute on Miller Creek trail. Fifteen foot stock bridge construction, drain installation/tread repair over five miles on Cascade Lake Trail/Observation Peak Trail - intensive tread and drainage work over 1,200 linear feet of eroded trail on Mt. Holmes Trail.

Huntoons Platoon: 120 linear foot turnpike, drain installation over eight miles of Specimen Ridge Creek trail.

Student Conservation Association: 1,200 linear foot reroute, 900 linear foot abandoned trail rehab, drain maintenance over 11 miles on South Boundary trail.

Aspen Youth Alternatives: 4,000 linear foot abandoned trail rehab at Miller Creek; 3,950 linear foot abandoned trail rehab at Mountain Creek.

Montana Conservation Corps: Turbid Lake Road restoration project; 1,200 linear feet of new tread construction, 25 foot turnpike construction.

Buildings and Utilities

Underground storage tank replacement continued, including the Mammoth Pagoda, the Mammoth Chapel, and at Lake, Canyon and the Grant Ranger Station.

Major housing and building rehabilitation work included: the rehab of the duplex at South Entrance (#211), rehab of the new Concessions Office in the Administration Building and the Blacksmith Shop, finishing the Old Faithful Emergency Services Building and the Canyon Visitors Center, gutting and rewiring of building #5, and completing work on the new garage at Mammoth.

The following units were repainted: #30, #55, #565, #554, #560, #558 #372, #374, #563, #371, #393C, #595B, #7D and Little People's Learning Center.

Design work began on the rehab of building # 27 (YCR). Work on the ADA house (#394A) was started.

Housing initiative funds continued the construction of the second four-plex at the east Entrance.

More specialized projects included: completing the West four-plex utilities, replacing the Lamar generator wiring, replacing the lights in the Norris Museum, utility work on the bison pen at Stephen's Creek, including wiring and piping, and redoing the Lamar water system.

New hot water heater was installed at the Beartooth Road Camp, the lighting was replaced in the old Fire Cache, and sidewalks by the Mammoth Clinic and Jail were poured and cut.

PUBLIC AFFAIRS OFFICE

Marsha Karle - Chief of Public Affairs (GS-12, PFT)

Cheryl Matthews - Assistant Chief of Public Affairs (GS-11, PFT)

Elizabeth Murray - Public Affairs Specialist (GS-07, PSF)

Stacy Churchwell, Administrative Assistant (GS-06, PFT converted to GS-07 in December 1996).

In addition to the regular staff, the Public Affairs Office had two volunteers. Susan Vissage volunteered from October through March; Terry Eddington from December through February.

Budget

The ONPS base for Public Affairs was \$170,000. Additionally, our office received \$10,325 in film permit application and monitoring fees (\$20,412.50 was collected in calendar year 1996). This money was used to pay a portion of Elizabeth Murray and Stacy Churchwell's salaries in addition to the salaries of other park staff who assisted filmers and photographers with projects in the park.

General Information Services

The Public Affairs Office serves as a clearinghouse of information for the park, the public, as well as for local, national, and international organizations and Congressional offices, and responds daily to written, telephone, and walk-in requests for assistance and information.

In addition to numerous responses to a variety of information requests, the Public Affairs Office responded to 26 Freedom of Information requests this past year.

The Public Affairs Office worked closely with the Regional and Washington Public Affairs Offices, keeping them informed on a variety of matters. Major news items involving Yellowstone included bison/brucellosis, visitor use management, wolf restoration, lake trout, entrance fee increase, federal impasse, budget, fires, plans for the 125th anniversary, road reconstruction, and the New World Mine.

News Releases

There were 84 press releases, 13 emergency news call-outs, and 2 media advisories issued in 1996.

Photo/Slide Requests

The Public Affairs Office answered over 120 requests for the loan of slides and photographs on Yellowstone subjects. These requests came from the general public,

educational institutions, and the media. Also, film processing for other divisions in the park is handled by this office; approximately 170 orders were processed.

Publication Editing Requests

The Public Affairs Office responded to more than 200 written and phone requests for editing publications about Yellowstone. These requests were often time consuming in that they required extensive research in order to provide accurate information for major national and international publications.

Marsha and Cheryl spent a great deal of time assisting the Billings Gazette with fact-checking and providing information for their 125th anniversary book, in addition to assisting with the park's anniversary book.

Filming Permits

Sixty-three filming and photography permits were issued ranging from nature film documentaries to product commercials, totaling \$20,412.50 in application and monitoring fees. Additionally, the Public Affairs Office assisted numerous other film companies and freelancers throughout the year, which often required extensive work-up and scheduling.

The JASON Foundation for Education submitted a proposal to film a live, interactive, educational science program in the park for "Journey from the Center of the Earth." They began scouting, interviewing park staff, and filming the initial stages of their program in 1996. Cheryl and Marsha spent many hours planning, including arranging interviews with park staff, assisting in organizing the curriculum for the program, location scouts, conference calls and meetings with the JASON Project and other production companies involved in producing the program. This planning process was on-going through the year in preparation for the live broadcasts to occur in the spring of 1997.

Media Contacts

With the transport of a second group of wolves into Yellowstone in January 1996 and continued interest in the established packs and their new litters from the reintroduction efforts in 1995, came an influx of media and public inquiries. This interest continued throughout the year with intense media coverage, consisting of numerous phone and personal interviews, visits to acclimation pen sites visits, and general, on-going questions regarding the locations and welfare of the wolves.

Additionally, President Clinton's visit to the park in August to announce the agreement to stop the New World Mine development prompted a flood of media calls, before, during and after the announcement, and approximately 50 media covered the speech at Baronett Peak.

The Public Affairs Office also responded daily to numerous requests for information and interviews from local, regional, national, and international news media, on various other controversial issues, such as bison management, visitor use management, fee increases, and budget, to name a few. The Public Affairs Office conducted interviews with approximately 75 television stations, 50 radio stations, and over 100 print media on an on-going basis throughout the year. Additionally, interviews with foreign news media were conducted with approximately 20 television stations, 5 radio stations, and 10 print media.

Congressional/Official and Other Visitors

Throughout the year the Public Affairs Office assisted with programming and arrangements for United States government dignitaries, park officials, and other guests. A sampling of these visitors follows:

- Director Kennedy visited Yellowstone in July.
- President Clinton and the First Family visited Yellowstone on August 12, 1996. President Clinton announced in a speech at Baronett Peak the agreement with Noranda to stop the New World Mine development. Many hours of intensive, last-minute planning went into arranging his visit, including location scouting, arranging staff support for the event, compiling a list of invited guests, and setting up a center for media, with many constant and last-minute changes. Among the invited guests were Congressman Bill Richardson of New Mexico, and Congressman Pat Williams of Montana.
- Senator Craig Thomas visited Yellowstone in August.

Official Visitors/Countries

The Public Affairs Office assisted with visits by many foreign dignitaries and organizations including government officials and park managers. Thirty-six organizations were represented from 19 different countries including Africa, Australia, China, Croatia, Czech Republic, Finland, Germany, Hungary, Indonesia, Israel, Italy, Japan, Korea, Mexico, Russia, South Africa, Taiwan, Thailand, and Turkey.

Meetings/Special Events

- Winter Visitor Use Management - February, December
- Greater Yellowstone Coalition on the 125th Anniversary - March
- American Gramophone on the 125th Anniversary - March
- Montana Governor's Tourism Conference - April
- Wyoming Governor's Tourism Conference - April
- Accessible Fishing Platform Dedication - July
- Squad Retreat - July, September
- Rocky Mountain Elk Foundation Dedication - July

- Commercial Services Planning Workshop - September
- Montana State University on the 125th Anniversary - September
- Arts for the Parks - September
- Marketing Director, Canon - September
- Greening of Yellowstone Workshop - September
- Annual Christmas Tree Lighting Ceremony - December
- 125th planning meetings

RESOURCE MANAGEMENT OPERATIONS AND VISITOR PROTECTION

Chief Ranger - Dan R. Sholly (GS-14)
Assistant Chief Ranger - Michael B. Murray (GS-13)

<u>BUDGET</u>	<u>FY95</u>	<u>FY96</u>
ONPS	\$4,450,000	\$4,584,000
Fee Collection	565,000	557,000
Fishing Fees	<u>225,000</u>	<u>350,000</u>
TOTAL	\$5,240,000	\$5,491,000

<u>PERSONNEL</u>	<u>FY95</u>	<u>FY96</u>
FTEs	142	144
# Permanent employees	85	87
# Seasonal employees	175	163
# YCC enrollees	<u>30</u>	<u>30</u>
TOTAL # employees	290	280

Retirements

None

Resignations

Catherine Syrbe - from Park Ranger, Mammoth Hot Springs
Charissa Reid - from Lake District Clerk
Katie Temple - from Communications Technician
Kris McAdams - from North District Clerk

Reassignments

Carrie Taylor - from Communications Technician to VSO Clerk

Transfers out of RMO&VP

Katherine Gonzales - Supervisory Communications Technician to the Presidio
Scott Bentley - Park Ranger at Old Faithful to San Antonio Mission NHS

Sarah Gale - Communications Technician to Maintenance
 Richard Bahr - Assistant Fire Management Officer to Midwest Regional Office
 Thomas Betts - Snake River Sub-District Ranger to Wrangell-St. Elias NPP

New Hires

Shirley Squire - Supervisory Communications Technician
 Martha Downing - Communications Technician
 Linden Schlenker - Communications Technician
 Peter Schmidt - Communications Technician
 Craig Patterson - Park Ranger at Old Faithful
 Alison Robb - Assistant Sub-District Ranger at Old Faithful
 John Piastuck - Park Ranger at Gallatin Sub-District
 Rick Mossman - Snake River Sub-District Ranger

PARK VISITATION

<u>Visitation by Entrance Station</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
West	994,403	1,090,477	1,120,522
South	863,442	868,845	814,300
North	593,059	599,611	587,661
East	413,537	356,857	316,449
Northeast	201,830	227,866	191,541
SUB-TOTAL	3,066,276	3,143,655	3,030,473
U.S. Highway 191	959,666	958,252	936,341
TOTAL	4,025,942	4,101,907	3,966,814

FEE COLLECTION (FY96)

<u>Entrance Stations</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
West	\$1,602,381	\$1,656,344	\$1,487,648
South	226,022	174,323	117,889
North	593,059	740,109	702,758
East	413,537	787,160	727,972
Northeast	201,830	362,885	336,539
SUB-TOTAL	\$3,798,412	\$3,720,821	\$3,372,806

Other fees

Campground fees collected	\$ 370,583	\$ 404,918	\$ 285,319
Boating SUP fees collected	34,625	32,360	30,330
Fishing SUP fees collected	392,267	433,274	662,749

TOTAL FEES COLLECTED \$4,354,997 \$4,797,854 \$4,571,654

VISITOR SERVICES OFFICE (VSO)

<u>Permits Issued</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Golden Eagle Passports	12,622	13,126	11,999
Golden Age Passports	13,074	13,799	12,202
Golden Access Passports	750	800	750
Annual Park Passes	17,183	17,190	15,848
Boat Permits: motorized	1,543	1,204	1,292
non-motorized	2,076	1,917	2,211
Fishing Permits	77,091	75,071	71,225
Other Special Use Permits	147	180	175
Park Supplier Permits	760	825	682
Employee Vehicle Permits	3,900	3,900	3,900
Fee Waivers	297	340	300
Incidental Business Permits	153	132	131

<u>Lost and Found</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Found items	3,023	3,612	3,177
Lost items reported	1,900	1,950	2,033
Items returned to owner	730	851	650
Items returned to finder	340	284	260

<u>Visitor Information (VSO)</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Information calls	21,360	25,640	23,918
Code-a-phone responses mailed	5,258	6,114	7,990

The Visitor Services Office staff inventoried and distributed 35 different park publications such as maps, newspapers, bison and bear warnings, backcountry brochures, and boating permits to 11 campgrounds, 5 entrance stations, and 7 visitor centers. Over 30 tons of brochures, maps, and newspapers were delivered by the office staff through the course of the summer. The office supervisor, with the help of the Communications Center and Interpretive staff, coordinated and produced park informational mail-out packages.

<u>COMMUNICATIONS CENTER</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Identification Notices	249	201	181
Number located	39	31	40
Percent located	16.7%	15.4%	22%
Criminal History Checks*	2,012	1,293	1,607
* No. Individuals Run	513	509	557
Other Law Enf. Checks	61,916	59,802	118,861

Vehicle Checks	12,401	11,499	8,961
Persons	8,851	9,166	19,588
Locals	15,531	17,287	24,733
NCIC Inquiries	25,131	21,850	65,579
NCIC Entries	4	4	4
APBs	38	36	26
ATLs	14	28	33
Wrecker Requests	212	193	206
Incoming Calls	189,431	234,202	195,191
Calls taken by *CINDI	125,020	165,398	126,530
% of calls taken by CINDI	66%	60.8%	65%
Information Packets Mailed	28,053	28,076	20,300
Regular	26,419	26,363	18,412
Foreign	1,634	1,713	1,888

VISITOR PROTECTION

	<u>1994</u>	<u>1995</u>	<u>1996</u>
Employee certifications			
Permanent commissioned rangers	54	53	48
Criminal Investigators			4
Seasonal commissioned rangers	66	66	71
Deputy USF&W Agents	29	29	0
County Deputy Sheriff	24	40	41
Deputy U.S. Marshal	1	1	2
SCUBA certified	4	3	5
Firearms Rangemaster	28	20	20

<u>Law Enforcement</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Case Incidents Reports	5,375	5,165	6,308
Motor Vehicle Accidents	603	594	591
Part I Offenses	155	137	110
Part II Offenses	4,155	6,502	8,527
Car Clouts	65	26	39
Verbal Warnings	22,453	21,282	20,898
Violation Notices Issued	3,279	3,216	4,032
Arrests	150	89	102
Court Cases (heard in YNP)	274	218	238

<u>Resource Protection</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
* = no. Violation Notices issued			
*Preserv. of Nat. Resources	75	64	66
*Preserv. of Cult. Resources	n/k	n/k	5
*Snowmachine	225	113	85
*Camping	182	159	244
*Closed Area	286	36	167
Verbal Warnings for Firearms	664	725	875
*Firearms	25	35	41
*Wildlife/Hunting	15	11	11
Fishermen contacts	8,569	10,280	8,311
Verbal Warnings for Fishing	565	519	363
*Fishing	76	96	84
*Swimming/Bathing	117	79	56

Visitor Fatalities (name, date, type of incident)

1. Ruka Waclaw, 5/20/96, cardiac arrest, Lake.
2. Sulo Isokivela, 8/04/96, cardiac arrest, Grant Village.
3. Eve Margaret Wright, 8/05/96, cardiac arrest, Grant Village.
4. Carolyn Bennett, 9/19/96, motor vehicle accident, U.S. 191.
5. Lyndon L. Meeks, 10/16/96, motor vehicle accident, U.S. 191.

<u>Emergency Medical Services</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Basic Life Support cases	572	594	609
Advanced Life Support cases	145	128	112
TOTAL # Cases	717	696	721
NPS Ambulance Transports	288	263	267
Air Ambulance Transports	43	55	39

West Park Hospital of Cody, Wyoming, the park medical services concessioner, provided oversight to the park EMS program. In 1996, the park had a total of 120 personnel certified as EMS providers. This number included 26 First Responders, 78 EMT-1s, 14 Park Medics, and two Paramedics. A total of 569 staff-days of EMS training was conducted.

<u>Search and Rescue</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
# SAR incidents	21	44	9
# staff hours on SARs	1,775	1,478	825
personnel costs	\$34,080	\$33,804	\$14,025
# flight hrs. on SARs	12.5	14.9	15.9
flight costs	\$11,900	\$16,314	\$15,554
Total SAR expenditures	\$45,980	\$50,118	\$19,579

<u>Structural Fire</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
Alarms	292	224	257
Fires	34	15	11
Extrication	n/k	4	2
Hazardous materials responses	n/k	3	3
TOTAL	326	246	273

A variety of special training sessions were held in 1996. The Mammoth Fire Department received training in confined space rescue. The structural fire staff reorganized the Firefighter 1 & 2 proficiency training to meet new NFPA standards and reorganized Sara Title III, Tier II, reporting program to make it more efficient. The park purchased two new sets of Amkus "jaws of life" to be stationed at Lake and Old Faithful. The permanent training/inspector position continued to be lapsed.

Wildland Fire Operations

The wildland fire season began very slowly due to a parkwide snowpack averaging about 120% of normal and heavy rains in April and May. May rainfall was over 3 inches at Mammoth and over 5 inches at South Entrance. There were a total of 24 fires, 11 wildfires and 13 PNFs. The 11 wildfires burned only about one-tenth (.10) of an acre while the 13 PNFs burned a total of 3,261 acres. The Coyote PNF began on June 26 and burned until October 28, burning 1,669 acres; the Pelican PNF started on August 11 and burned until October 28, burning 1,570 acres. The Coyote PNF was managed on an interagency basis with the Gallatin National Forest, and a Prescribed Fire Overhead team assisted in the management of the fire for approximately two weeks. These two large PNFs burned within prescription and were considered successful promoting the role that PNFs should be allowed to play in the GYA.

The 1996 fire season was one of the longest and most active in the western United States, burning more acres than were burned in 1988 and 1994. Yellowstone filled 39 requests for interagency support to wildland fires from Alaska to Arizona, dispatching a total of 147 park personnel. One of these dispatches was a 20 person Type II crew that was sent to Oregon for 21 days. The majority of the dispatches was the helitack crew and contract helicopter in support of wildland fire in the GYA. Two of those efforts involved rescue operations of fire personnel who had been trapped by extreme fire behavior and had deployed fire shelters.

Three park personnel were assigned to Incident Management Teams in Region 1. All three received multiple dispatches to complex fires in 1996. The Prescribed Fire Module stationed in Yellowstone had 18 assignments in 1996 including an early season detail to Everglades NP to assist in prescribed burning. The module was also a mainstay in the monitoring of the Coyote and Pelican Fires in Yellowstone.

The park trained approximately 240 personnel in various wildland fire courses in 1996. These courses included Basic Firefighter (S-130/S-190), Pumps (S-211), Chainsaws

(S-212), Helicopter Training (S-217), Intermediate Fire Behavior (S-290/S-390), Standards for Survival, and Strike Team Leader (S-339). Fire management personnel assisted in instructing courses in the Southcentral Zone, the Northern Training Center as well as at Little Bighorn Battlefield.

Air Operations

1996 was the third years of a three-year contract agreement with Geo-Seis Helicopters of Fort Collins, Colorado. The contract helicopter was a Lama Aerospatiale 315b. The flight rate was \$1,038/flight hour with a 200 hour guarantee for a contract period of 108 days, June 15 to September 30.

The contract helicopter flew 325 hours, with the majority flown in support of wildland fire operations on an interagency basis throughout the western United States. Helicopter support modules were dispatched to Utah, Montana, and other locations in Wyoming for initial attack and extended support on project fire operations. Short-haul training continued with 15 park personnel trained for operations. There were 38 park-related air-medical flights flown in 1996, down from 53 flown in 1995.

Corral Operations

At year's end, the corral operation had 90 head of stock including six mares to foal, one open mare, and two yearling fillies. Four horses and one mule were purchased in Tennessee, and four horse and one mare were purchased locally. A total of nine animals were surveyed due to old age or unsoundness.

The corral operation purchased 100 tons of small square hay bales and 125 tons of large round hay bales in 1995. The small bales of certified weed free hay came from a private contractor in Townsend, Montana, who delivered the hay to the Stephens Creek facility. This hay was distributed to various park locations by park personnel. The large bales were purchased from a contractor in Emigrant, Montana, and hauled to Stephens Creek by park personnel and used at Stephens Creek. The park also purchased 5 tons of hay cubes (primarily for backcountry use), 8 tons of grain, 0.5 ton of Crystlyx mineral, and 1 ton of salt.

Regular corral operation duties included providing health care of the stock herd including vaccinations and worming, training of young and new stock, summer shoeing of park stock, supplying feed to the field stations, and conducting stock use training for park personnel.

Special projects included packing 5-foot solar panels and dirt samples for the Center for Resources; supplying the Mt. Holmes and Mt. Sheridan fire lookouts; packing feed, lumber, and supplies for backcountry ranger stations; and assisting a hazard fuel reduction project at Lake by using two mule teams, rather than machinery, to skid logs that were identified for removal to the roadside.

<u>Backcountry Management</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
# Backcountry Permits	7,005	7,268	6,899
# Visitor Use Nights	45,267	45,774	45,743
# Stock Use Nights	7,774	7,256	8,258

Backcountry use was down slightly in 1996, primarily due to the record snowpack and high spring water conditions. Several areas, including Bechler and the Lamar River Trail, did not open until mid-July because of high water and washed-out trails.

Backcountry rangers and trail maintenance crews cleared an unusually high number of trees in 1996. Research shows that most fire-killed trees fall 8-10 years after the fire. The major fire events Yellowstone experienced in 1998 ensure that a high number of trees will need to be cleared for the next 2-3 years.

An advanced reservation system for backcountry campsites was introduced in 1996. Beginning April 1, visitors could make reservations by mail for a \$15 fee. Reservations are limited to 30% of the campsites in an area. By the end of the 1996 season, 834 reservations had been made producing \$12,510 of revenue for the park's backcountry management program.

A Backcountry Trip Planner newspaper was developed, printed, and distributed in 1996. The trip planner is designed to replace several photocopied handouts and brochures and provides information backcountry permits, where and how to make reservations, backcountry regulations, safety, fishing, weather, camping in bear country, and Leave No Trace outdoor ethics.

Six rangers attended the Fifth Annual Rocky Mountain Area Backcountry Manager's Workshop held April 16-18 at the Big Creek Environmental Education Center, Flathead County, Montana. Workshop topics included an update on the Servicewide Wilderness Steering Committee, fee collection/cost recovery update, cultural resources management, an Arthur Carhart Wilderness Training Center update, and commercial use in the backcountry.

Yellowstone participated in the Leave No Trace Outdoor Ethics educational program in 1996 by sending two rangers to a Leave No Trace Trainers Course and sending one ranger to a Leave No Trace Masters Course. A Leave No Trace message was incorporated into the Park's new Backcountry Trip Planner.

<u>Limited Concessions Permits</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
# Concessions Permits	58	56	52
# commercial stock trips reported	569	616	548
# CPs transferred/terminated	0/1	0/2	0/4

In 1996, 52 saddle and pack stock outfitters operated in Yellowstone under Concessions Permits; 3 of these were llama packers. Over 200 outfitters and guides attended the annual 2-day meeting in June. A new 4-year Concessions Prospectus for Saddle and Pack Outfitters was issued in 1996.

Resources Management Operations

The RMO&VP Division is responsible for developing and implementing the Resource Operations Program required to fulfill the broad direction outlined in Yellowstone's Resource Management Plan. District Rangers, Sub-District Rangers, and the District Resource Management coordinators, in cooperation with the Division's Resource Management Operations Coordinator, jointly plan and accomplish the program.

Exotic Vegetation Management

RMO&VP staff is responsible for preventing, monitoring, and controlling exotic plant infestations. Increasing infestations, recent amendments to federal laws, and an increase in ground disturbance due to highway reconstruction have focussed more effort and attention on the exotic plant program. In 1994, the park established a resource team to update the 1986 Exotic Vegetation Plan and write an Environmental Assessment for the new plan. The draft plan was completed in the winter of 1996/1997. The Environmental Assessment is currently being written. Weed managers continued to upgrade the WEEDBASE database program (created in 1994) to better monitor and evaluate weed infestations. Information stored in the program is used to complete herbicide use logs, Greater Yellowstone Area weed reporting requirements, and to develop parkwide weed maps using ARCInfo GIS software. Working with the park Maintenance Division, sand and gravel pits in Park and Gallatin Counties were inspected for weed infestations and contracts were modified to prevent the introduction of noxious weed. Managers were actively involved in several ecosystem weed initiatives including the Upper Madison, Henry's Fork, and Upper Snake River Weed Management areas. An aggressive weed control program involving 160 staff, 40 volunteers, and treating 33 species, including 443 acres of knapweed, 28 acres of toadflax, 81 acres of woolly mullein, 224 acres of houndstongue, 94 acres of yellow sweetclover, 162 acres of Canada thistle, and 771 acres of other weeds was completed.

Resource Management Workshop

The Tenth Annual Resource Management Workshop was held January 23-25. The workshop topic was *Visitor Use: Impacts and Management*. Several nationally known speakers were on the agenda including: Dr. Gary Machlis (University of Idaho), Dr. Steve McCool (University of Montana), Dr. Bob Manning (University of Vermont), Dr. Wayne Freimund (University of Montana), and Dr. Terry Anderson (Montana State University).

Fisheries Management

RMO&VP staff, with the income generated by the fishing fee program, emphasized fishing education and regulation enforcement in 1996. A parkwide training program was upgraded to teach permit issuers to interpret regulations and present the information to anglers. Rangers contacted over 11,000 anglers, issued 567 verbal warnings, and issued 94 violation notices. Approximately 16% of all anglers were contacted in the field. Thirty-two fisheries exit gate surveys were completed at the entrance gates to calibrate and complement the Volunteer Angler Report system.

Coordinated Trout Unlimited lake trout fishing project, June 8-14. Trout Unlimited members conducted an experimental early season fishing project to help eradicate lake trout in Yellowstone Lake. Fifty-two members participated, fishing from shore and from boats for a total of 24 angling days. Total catch was 565 cutthroat trout and 0 lake trout.

Assisted in fisheries management during the transition of park fisheries management from the U.S. Fish and Wildlife Service to the National Park Service in Yellowstone. Oversaw seasonal fisheries hiring and completed payroll duties. Worked closely with fisheries personnel to assist in a smooth, efficient transition.

RMO&VP staff cooperated with other park staff to identify and monitor lake trout presence in Yellowstone Lake. Field staff coordinated informational contact with visitors and TWRS fishing guides who caught lake trout in the lake, produced a field form to report lake trout catches, coordinated surveys of anglers at Bridge Bay Marina for further lake trout information, contacted fishing guides and stores for lake trout posters and information signs, assisted with fall gill netting for lake trout, and served as a member of the resource team established to lead lake trout efforts.

Inventory and Monitoring

Staff monitored amphibians in cooperation with Dr. Charles Peterson, Idaho State University, at the South Entrance Pond and Harlequin Lake. Dr. Peterson monitored on a monthly basis; park staff filled in on a weekly basis. Data are analyzed and reported by Dr. Peterson.

Whitebark pine transects at Avalanche Peak, Pitchstone Plateau, Big Game Ridge, and Two Ocean Plateau were conducted and monitored in cooperation with the Bear Management Office and the Interagency Grizzly Bear Study Team. Data were forwarded to the IGBST for analysis.

RMO&VP staff monitored air quality at the National Atmospheric Deposition Program station (NADP) at the Tower Ranger Station including collection and performance conductivity, Ph, and volume measurements on 52 weekly precipitation samples. Staff also participated in four inter-site comparison studies, processed one "blind audit sample," underwent inspection and testing by a USGS contractor, and maintained the Air Quality station at the Lake Ranger Station including maintaining the Particulate

Monitoring Network (IMPROVE) sampler system, Ozone Effects sampling, and gaseous pollutant and visibility monitoring program.

In cooperation with USFS, Northern Region, RMO&VP staff monitored gypsy moth presence parkwide. RMO staff placed and retrieved 118 pheromone traps throughout the park. Delimitation trapping was conducted at Canyon and Grant Village because a moth was caught at each site in 1995. No moths were caught in 1996.

Geothermal Management and Physical Resources

RMO staff and volunteers monitored 81 thermal pools and geysers in the Upper, Middle, and Lower Geyser Basins for vandalism. Coins, cigarette butts, asphalt, sticks, rocks, and nails thrown into the thermal features were removed by hand. Six cigarette disposal containers were purchased and installed at the entrances to geothermal areas to reduce litter. An elevated ski trail, 600 feet in length, was installed in the Upper Geyser Basin to minimize off-trail skiing and subsequent resource damage. Staff again collected water samples at eleven locations throughout the year as part of a cooperative USGS/NPS program monitoring area geothermal activity. RMO staff also monitored water flow in Reese Creek in response to irrigation rights.

Hazard Trees

Hazard tree management activities increased in 1996 beginning with a hazard tree training program at the Slough Creek Campground. Respective districts conducted surveys and removed hazard trees or marked trees for concession removal in concession land assignment areas. At Madison Campground, over 3,000 trees were surveyed with 185 marked for subsequent removal by AmFac Parks and Resorts. Following tree removal, 178 trees were hand-planted in the campground by RMO staff and volunteers. In addition, approximately 70 trees in the West District were removed from developed areas, roadside picnic and pullout areas, and roadsides. Hazard tree surveys were conducted in every major campground and in major developed areas.

A high-wind event occurred on August 6 which blew down 583 trees throughout the park. Twenty-nine incidents of property damage were reported as a result of the wind event with a total estimated monetary damage of \$54,000. Four personal injuries were also reported.

Wildlife Management

RMO&VP staff coordinated spring carcass surveys on the Firehole River, Norris area, and Heart Lake with the Bear Management Office. Data were forwarded to the Bear Management Office for analysis. Staff monitored Yellowstone Lake tributaries for cutthroat trout spawning and associated bear activity at Lake, Bridge Bay Campground, and Grant Village Campground. RMO&VP staff performed interpretive talks on bear habitat use and management for park visitors, classrooms, and professional meetings and oriented park employees to the park's bear management program and to living in grizzly

bear habitat. Other wildlife management projects completed in 1996 include: managed habituated coyotes, elk, bison, grizzly bears, and black bears parkwide; conducted integrated pest management programs for bats at the Lake Ranger Station, Lake Lodge, Lake Hamilton's Store, and the Grant Village Camper Services Building; assisted with logistics and security for the wolf reintroduction project.

Bison Management Operations

Bison management operations along the park's boundary with Montana continued to function under the terms of the Interim Bison Management Operating Plan. Bison-related field activities included monitoring bison activity within or near the park boundaries, strategic hazing activities to move bison back into the park, and assisting state agencies as requested with bison management operations. During the fall, a bison capture facility was constructed in the park near Stephens Creek (North District) and it began operation in January 1997. NPS personnel involvement and costs for bison management operations is indicated below.

<u>West District</u>	<u>1995</u>	<u>1996</u>
Monitoring	120 hrs.	252 hrs.
Hazing (# incidents)	65 hrs. (11)	135 hrs. (11)
Shooting Ops. (# incidents)	45 hrs. (4)	44 hrs. (2)
TOTAL Staff Time	230 hrs.	431 hrs.
Estimated Cost (\$22/hr.)	\$5,060	\$9,482

North District

Monitoring	152 hrs.	153 hrs.
Hazing (# incidents)	52 hrs. (7)	276.5 hrs. (37)
Shooting Ops. (# incidents)	654 hrs. (20)	103.5 hrs. (6)
Corral preparation	64 hrs.	520 hrs.
TOTAL Staff Time	922 hrs.	1,053 hrs.
Estimated Cost (\$22/hr.)	\$20,284	\$23,166

YELLOWSTONE CENTER FOR RESOURCES

Director - John D. Varley (GS-14)

Deputy Director - Wayne G. Brewster (GS-13)

1996 was marked by some spectacular successes, including the second year of wolf reintroduction, achieving the listing of Obsidian Cliff as a National Historic Landmark, and the relocation of an professional archeologist (albeit only partly assigned to Yellowstone projects) to the park.

It was also a year of near-record flooding of rivers during spring run-off, and the beginning of a record year for loss of Yellowstone bison by control actions taken at park boundaries. The park lost the close association with one of its long-term partners when the Yellowstone Fisheries Assistance Office closed its doors in August, victim of changing government mandates and shrinking budgets. Of necessity, the Center began to build its own professional staff to tend to aquatic resources monitoring and management.

The Center printed an annual report in which interested readers may find more detailed information about resource management and research projects in the park. Copies are on file in the Yellowstone Center for Resources and the park's Research Library.

BUDGET AND STAFFING

The Yellowstone Center for Resources (YCR) employed 37.33 full-time equivalent (FTE) staff to conduct work in natural and cultural resource management, planning and compliance, and advanced resource technology. Budget analysts Melissa McAdam reported the budget for the YCR as follows:

ONPS	\$1,544,100
CRPP	201,100
NRPP	404,000
Fishing fees	274,500
Fed. Hwys.	626,700
Other	<u>254,262</u>
TOTAL	\$3,304,662

RESOURCE TEAM PROJECTS

Resource teams are convened as appropriate by the park's Resource Council and assigned to specific, defined projects. Resource teams are interdisciplinary and cross-divisional. Resource specialists from the YCR worked on the following resource team projects in 1996:

Bison Management. A long-term effort to develop an interagency bison management plan continued. The NPS, USDA Animal and Plant Health Inspection Service (APHIS), U.S. Forest Service, and the state of Montana continued to meet and develop alternatives for a draft plan and environmental impact statement (EIS) scheduled for public release by November 1996. Interim operating plans were released for review in December 1995 and approved by Yellowstone's Superintendent and the NPS Intermountain Field Director on August 8, 1996. In the autumn, park staff constructed a facility to capture bison in the Stephens Creek administrative area near the park's north boundary. Management actions under the new plan began in November near West Yellowstone. A total of 1,084 bison were shipped to slaughter or shot in the field during the winter of 1996-97. The DOL shot 566 bison and shipped to slaughter 48 more bison. At the Stephens Creek capture facility, the NPS provided 462 bison to DOL for shipment to slaughter. Carcasses of animals shot were donated to Native American tribes or to social service organizations. Eight bison were killed because of parasite infection or injuries sustained during capture operations.

News studies of potential brucellosis transmission and control received \$900,000 NPS-NRPP funds (over a three-year period) to Yellowstone and Grand Teton National Parks for research on numerous scientific questions related to the bison management issue.

Boundary Lands Restoration. NRPP funds received for the BLA restoration project were reprogrammed to other priority projects. About \$12,000 was expended to complete a preliminary archeological survey. Vegetative test plots were maintained but at a reduced level. The remainder of this project was deferred indefinitely.

Fisheries Management Future. The U.S. Fish and Wildlife Service (USFWS) closed their Yellowstone Fisheries Assistance Office (FAO) and moved to the USFWS Bozeman Fish Technology Center by October 1. At peak, USFWS devoted 5 permanent staff—and provided 50 percent of the funding—to monitor and manage fisheries and other aquatic resources within Yellowstone. Their departure left the park solely responsible for staffing and funding these efforts, and the available resources accommodated only a significantly reduced program. Dan Mahony, formerly of the USFWS, was offered and accepted a fisheries biologist position as a GS-9 with the park; he was subsequently promoted to a GS-11. Dr. Jack McIntyre, a retired USFWS fisheries biologist, volunteered to be the project leader until the NPS is able to hire a project leader. Management of the fisheries program is now under the YCR, Branch of Natural Resources, Aquatic Management Office. One additional fisheries biologist was hired along with one term fisheries technician. This resource team's work was completed.

Grizzly Bear Conservation Strategy. The Yellowstone Ecosystem Managers' subcommittee of the Interagency Grizzly Bear Committee (IGBC) had previously assigned an interagency team of biologists to complete a *Conservation Strategy* document to provide guidance for managing grizzly bears and their habitat, if and when the population should be removed from the list of threatened species. In 1996, two staff biologists continued to attend meetings and prepare a strategy based on consultations with park managers and other biologists. The goal to have a draft plan in late 1996 was

postponed until 1998. Meanwhile, high levels of human-caused grizzly bear mortality in 1995 and 1996 prevented recovery goals from being achieved for the two consecutive years required before the USFWS can consider a change in status for the Yellowstone grizzly bear population.

Lake Trout in Yellowstone Lake. Following the discovery of lake trout in late summer 1994, experimental gillnetting and data collection continued. A shallow area near Carrington Island was identified as the only known lake trout spawning area to date. Gillnetting efforts focused on this location throughout the fall with excellent results. Six lake trout were radio-tagged and tracked during the summer, but only one fish was recovered later when it returned to the spawning area. The team began to address needs for new equipment, staff, and funding for lake trout control in the wake of the departure of the USFWS-FAO.

Opal Terrace. This committee addressed the encroachment of the Opal Terrace thermal feature on the historic Executive House in Mammoth. A series of alternatives were developed and presented to the Resource Council. The preferred alternative was rejected as being too costly, and the team was asked to come up with a "cheap" alternative of chipping a direct path across the feature.

Research Permitting System. The park's permit system was revamped so that proposed research projects in the park would receive more thorough peer review of incoming proposals. The team continued to work on upgrading the reporting system.

Road Reconstruction Planning. Work to inventory resources in association with park road segments and assess the impacts of road reconstruction continued to occupy large portions of cultural and natural resource specialists' work time, as well as significant effort by the park's planning and compliance staff. During 1996, such inventory, monitoring, assessment, and planning activity continued on 6 of 14 segments of the park's road system.

Winter Visitor Use Management. Park superintendents and national forest supervisors in greater Yellowstone agreed to participate in a Winter Visitor Use Management effort to provide updated information on the status of winter use, and options for future management. In 1996, the team held eight public meetings and produced two newsletters to share information and generate public comment about winter use issues and concerns. In December, the team drafted a preliminary report and presented it to the managers.

Wolf Restoration. The goal is to restore to the ecosystem a population of gray wolves that includes at least ten packs that produce pups for three consecutive years. When this is achieved and similar populations are present in central Idaho and northwestern Montana, the gray wolf will be removed from the list of endangered species and managed as resident species by the respective states.

In 1996, seventeen wolves were translocated from Canada, held in pens for approximately 10 weeks of acclimation, and released into the park. The movements,

behaviors, and welfare of the newly arrived wolves, in addition to the original 14 wolves and their offspring from 1995, were documented. The park staff devoted to this project received considerable assistance from volunteers and a newly developing program using student interns. Significant effort was made interpreting wolf restoration for park visitors, the media, and cooperators. Special programs, the *Yellowstone Wolf Tracker* newsletter, and fundraising efforts resulted in a high level of continued public and private support. Additional transplants of wolves from Canada were determined to be unnecessary, as wolf project leader Mike Phillips and other cooperators believed the program was ahead of schedule and under budget after the first two years of releases.

Fourteen wolf pups were born and nine wolves died (two hit by vehicles, two from pack rivalries, two shot illegally, one from thermal burns, and two from unknown causes). As of December 31, 1996, the GYA supported 40 free-ranging wolves. Twelve wolves were being held temporarily, pending release in spring of 1997.

CULTURAL RESOURCES

Branch Chief - Laura Joss

Increased communication and cooperation between the Branch of Cultural Resources, other divisions within the park, and outside partners were demonstrated in:

- the re-engineering of the cultural compliance process;
- re-establishment of an internship program with Montana State University;
- consolidation of the offices of part of the branch into the old Fire Cache;
- archeological training with the Resource Management Operations and Visitor Protection division;
- paleontological resource management planning;
- two consultation meetings with affiliated American Indian tribes; and
- participation in the Nez Perce National Historic Trail Coordinating Committee and Yellowstone Heritage Partnership.

Funding obtained from Federal Highways (\$302,600), the Cultural Resources Preservation Program (\$135,300), Cultural Cyclic (\$60,000), and the Yellowstone Association (\$21,700). made it possible to conduct archeological inventories and monitoring; archival, library and museum collection management; library operation and automation; and collection storage facility planning.

Archeology. The permanent duty station change of archeologist Ann Johnson to Yellowstone in October 1995 benefitted the park in oversight of Federal Highways-related archeological inventory and evaluation contracts, project monitoring, obtaining National Register determinations, and submission of compliance documents. An archeological inventory and evaluation project in the Black Canyon of the Yellowstone River was initiated. Hands-on archeological training was conducted, and Ann worked closely with law enforcement rangers to identify resource monitoring needs at sites like Obsidian Cliff.

The NPS Submerged Cultural Resources Unit surveyed portions of Yellowstone Lake for cultural and natural resources—shipwrecks as well as lake trout habitat.

Cultural Resource Inventory and Management. Catherine Lentz and other cultural resource staff reviewed 145 Resource Council projects, research permit applications, programmatic agreements, park design standards, National Register evaluations, road construction and rehabilitation plans, and accessibility projects, EAs on bison and housing, and other projects for compliance with National Historic Preservation Act requirements. Staff were also involved in the Historic Structures Inventory and Evaluation, preparing the List of Classified Structures (a computerized database of description, significance, condition, use, threats, possible treatments and cost estimates for historic buildings), and Historic Resource Studies on park concessions and administrative history.

Ethnography. Contacts from Native American groups affiliated with the park (Blackfeet, Confederated Salish and Kootenai, Crow, Nez Perce, Northern Arapaho, Northern Cheyenne, Shoshone-Bannock) were identified and consulted regarding projects and issues in the park. Contractors continued work on the park's *Ethnographic Overview and Assessment*.

Museum Collections. Yellowstone's collection of original watercolor sketches by Thomas Moran was loaned to the National Gallery of Art, in Washington, D.C. for a major exhibition. In exchange, conservators at the National Gallery were performing preservation work on the collection. Funds were tapped to help preserve Yellowstone's collection of historic touring cars, busses, stagecoaches, maintenance and patrol vehicles, and firefighting equipment. Vehicle and furniture storage rooms were reorganized, keyless lock systems were installed, and a hallway was constructed to improve access. For hosting and assisting with the park's first museum-related training, conducted by the Director of Collections Conservation at the San Diego Natural History Museum and the Geological Conservator at Cambridge University, Yellowstone staff were able to attend both courses at no cost.

More than 5,000 artifacts and specimens were added to Yellowstone's museum collection, and 2,986 historic objects were catalogued in 1996. A backlog of 2,500 specimens still needed to be identified, labeled, mounted, and catalogued, while 84 new plant specimens were collected in 1996.

Curator Susan Kraft worked with Lake resource management ranger Cindy Warden, who performed conservation treatment on the *E.C. Waters* capstan, recovered from Yellowstone Lake. The historic inlaid wooden map in the Mammoth Hot Springs Hotel also received conservation treatment in 1996, while volunteers explained the map's history to more than 1,500 park visitors who stopped to watch the work.

Research Library. A Yellowstone Association grant allowed the library to begin computerizing the card catalog for easier use. More than 2,500 items were made available to researchers through the online catalog on the library's new public terminal,

obtained free as surplus from the Bureau of Mines. Two employees were hired to compile a natural history bibliography of materials in the Research Library and add it to the service-wide natural resources bibliography (NR-BIB). The library acquired 182 books during 1996, many of them transferred from other Yellowstone or NPS offices. Several items were added to the rare book collection, most importantly the 1907 *Haynes Guide to Yellowstone National Park*, which completed the library's Haynes Guide collection, at a cost of only \$10. The library also purchased rare separates from *Scientific American* (1898 and 1915). Special donations included the W.W. Wylie collection, an oral history by Mildred Rossini (Wylie Camp employee, 1911-1913), John Ely Briggs' diary transcript and Wylie Permanent Camping Company brochure, and a collection related to Jack W. Meldrum.

Archives. Among items obtained by archivist Lee Whittlesey in 1996 were copies of two Cooke City assay books, dated 1883 and 1890; a copy of Truman C. Everts' original handwritten manuscript and biographical statement provided by Everts' granddaughter; and the original copy of the "Hotels and Machinery Record Book." A master archival inventory was put on computer as 19 jump-links off of Yellowstone's web page. Yellowstone was the first National Archives satellite, as well as the first national park, to accomplish this.

Access to the park museum collections, archives, and library required an average of nearly 30 hours of staff time weekly. Visitors included park staff, visiting researchers, writers, filmmakers and videographers, historical and landscape architects, and the general public.

NATURAL RESOURCES

Branch Chief - Stu Coleman

Again in 1996, monitoring and management of resources involved cooperation between the Branch of Natural Resources (BNR), who had primary responsibility for these activities, staff from the Division of Resource Management Operations and Visitor Protection (RMOVP), the Division of Maintenance, former park scientists now assigned to the Biological Resources Division of the U.S. Geologic Survey, and other agencies and institutions. The second annual joint Resource Management Summit, held at the Buffalo Ranch on October 29, facilitated discussion of issues of mutual concern without regard to division affiliations. A strong supportive bond continues to exist between BNR staff and resource management coordinators from the RMOVP.

Dominating staff time and funding were efforts to restore wolves and grizzly bears, control non-native lake trout in Yellowstone Lake, and manage bison near park boundaries. Staff continued to monitor and manage other vital but less visible resources as funding and time allowed.

Funding included \$1,183,043 for overall BNR programs and activities, an additional \$294,019 for wolf recovery, and \$194,000 for bison management and planning. The

BNR had to augment base funds with NRPP funds, originally obtained for Boundary Line Area Restoration, and on Federal Lands Highway Project monies to support permanent employees. Resource data collection, data analysis, and report submissions required for the highway rebuilding program continued to require much staff time and expertise.

Bear Management. In 1996, 1,181 black and grizzly bear sightings in the park were reported to biologist Kerry Gunther and his seasonal staff. There were 102 bear-jams, four incidents in which bears obtained human food or garbage in the park, and 20 reported confrontations between bears and people in which no one was hurt. There were no bear-caused human injuries, nor property damage other than incidents involving food, which resulted in one conflict with a grizzly bear and three with black bears. No grizzly or black bears had to be translocated or removed from the park.

Monitoring revealed 1996 to be low in some in key bear foods. Staff counted an average of one ungulate carcass per 3.7 km of survey route compared to the average of one per 5.3 km during 1992 to 1995, while 305 spawning cutthroat trout were counted in 12 monitored streams around Yellowstone Lake, fewer than on most streams during 1989 to 1995. On the plus side, whitebark pine cone counts at 10 transects in the park averaged 28.1 cones per tree; the annual average ecosystemwide from 1981 to 1995 was about 12 cones per tree.

Grizzly bear population monitoring, done in cooperation with the Interagency Grizzly Bear Study Team, revealed 33 adult females and 70 cubs-of-the-year counted in the ecosystem—by far the largest numbers since the annual counts began. Of these, 14 females and 30 cubs were observed in the park. There were four known grizzly bear mortalities and two known black bear mortalities during 1996. Only one of the deaths, that of a young grizzly hit by a vehicle, was human-caused.

Beaver. The park received \$3,500 from the Yellowstone Foundation to complete the first near-complete aerial survey of high-probability habitats for active beaver colonies in late October and early November. In 14.9 flying hours, biologist Doug Smith documented 49 active colonies with food caches and three additional sites with some evidence of beaver activity. In six other locations, a lodge was spotted but there was no clear indication of beaver occupancy. Nearly all beaver were associated with willow communities; 90 percent of the active colonies were in three areas: 1) the Yellowstone River upstream from Yellowstone Lake; 2) the Bechler area; and 3) creeks and rivers in the northwest corner of the park.

Birds. Endangered peregrine falcons were doing well, with 24 fledglings in the park in 1996. Bald eagles, recently downlisted to "threatened" in most regions of the country, fledged 12 eaglets from 20 active nests. Heavy spring flooding affected trumpeter swans, who made only four nest attempts from which only one cygnet hatched, and it did not fledge. Tree instability resulting from the 1988 wildfires contributed to a decline in osprey nests (from 100 in 1994 to 70 in 1996) and production (from a record 101 fledglings in 1994 to 37 in 1996). However, the variables influencing these populations were mostly natural and not cause for concern, according to bird biologist Terry

McEneaney. Adult common loons continued to hold on, although only four loonlets fledged from five known nest attempts. Colonial nesting bird censuses on the Molly Islands revealed a similarly poor production year, probably due to high water levels.

Park staff continued studies of raptor migration on Mt. Washburn, the North American bird migration count, breeding bird surveys, and the annual Christmas bird count. A new *Field Checklist of the Birds of Yellowstone National Park* became available in June. The bird biologist participated in working groups for peregrine falcons, bald eagles, harlequin ducks, and Partners in Flight. Partnerships were drawn between Yellowstone and the Manatlan Biosphere and Mariposa Monarca Biosphere reserves, important areas for Yellowstone species that winter in Mexico.

Fish and Aquatic Resources. Data from long-term monitoring at Clear Creek, a tributary of Yellowstone Lake, revealed low cutthroat trout spawner counts similar to 1994 and 1995; this low spawner escapement remained unexplained. High water conditions likely contributed to a substantial increase seen in length of cutthroat spawners. In July, the Arnica Creek drainage was surveyed to check for remnant non-native brook trout, discovered and controlled there in 1985 and 1986. No brook trout were found.

This year the park issued approximately 68,700 fishing permits and anglers returned 5,304 Volunteer Angler Report cards. Parkwide there were 233,900 angler days. Anglers landed approximately 507,500 fish, but only creeded about 29,400 (6 percent). The average angler fished 2.3 days on 1.5 different waters per day, and for 2.7 hours per day. Nearly 70 percent of single-day anglers landed one or more fish—70 percent cutthroat trout, 11 percent rainbow trout, 8 percent brown trout, and 6 percent brook trout. Mountain whitefish, lake trout, Arctic grayling, and unidentified fishes made up the remaining 5 percent. About 77 percent of anglers reported being satisfied with their overall fishing experience. Aquatic resources staff also reviewed sections of the draft EIS for the New World Mine, provided a fourth year of assistance to the Wyoming Game and Fish Department as they attempt to establish Yellowstone cutthroat broodstock for use in restoration projects outside the park, and verified the presence of the exotic New Zealand mud snail, whose effects on park resources remain unknown at this time.

Geothermal Resources. Park geologist Rick Hutchinson investigated 15 felt tremors, the majority from a single swarm on November 26, southeast of West Thumb Geyser Basin. After 40 years of general dormancy, Giant Geyser—one of the largest and most voluminous of Yellowstone's major geysers—appeared to be rejuvenating; six major eruptions were recorded. Eruptions of Old Faithful Geyser were recorded nearly continuously in order to document changes in its average interval and provide more reliable predictions for visitors.

As of July, imaging spectroscopy data had been obtained for more than 1,500 km² of the park, in cooperation with the National Aeronautics Space Administration. The data will be used to map surficial mineralogy and vegetation communities; study the evolution of hot spring deposits and related scientific questions, such as the correlation of bear habitat with the extent of whitebark pine stands; extrapolate geochemical and mineralogical

information over large areas; and establish a chemical background data base that can be used to evaluate the condition of park resources over time.

Mine-related Issues. Resource management specialist Mary Hektner and other staff spent substantial time reviewing preliminary text of the draft EIS for the proposed New World Mine less than three miles from the park's northeast boundary. During a visit to the park on August 12, President Clinton announced an agreement that suspended the permit application process for the mine and provided for the acquisition of property interests (currently estimated at \$65 million) held by Crown Butte through exchange of other properties or assets. Details were to be worked out by early 1997.

YCR staff also continued to monitor Mineral Hill mining activity on the park's north boundary near Jardine and work with Water Resources staff, exploring options for treatment and removal of the McLaren mine tailings just upstream from the Northeast Entrance.

Soils and Landforms. After eight years of field work, Henry Shovic, Ann Rodman, and other staff completed a comprehensive, ground-truthed soil and landforms survey. Data is organized into 79 map units that include information on 85 different soil types, soil properties, slopes, vegetation, bedrock and surficial geology, 95 landforms and 60 different surficial materials, creating a total of 600 different landform/surficial material combinations. The information is available in the GIS database and in two publications approved by the National Resource Conservation Service.

Ungulates. Park staff shared costs and time with the Northern Yellowstone Cooperative Wildlife Working Group to complete counts of ungulate herds on the northern range. On June 12, 229 bighorn sheep were counted in an aerial survey. Poor flying conditions prevented completion of an early winter elk count, but 2,921 elk were classified during a flight on March 12, revealing 28 calves:100 cows and 26 bulls:100 cows. In a helicopter survey on May 6-7, 2,493 mule deer were counted. On March 25, ungulate biologist John Mack flew and counted 229 pronghorn. Volunteers completed ground surveys for the second year to assess the distribution of pronghorn and evaluate the effects of bison management activities on what appears to be a vulnerable and declining population of pronghorn.

Vegetation. Surveys resulted in discovery of eight native and five non-native species of vascular plants not previously documented within the park. Botanist Jennifer Whipple located a new population of *Agrostis rossiae* Vasey (Ross' bentgrass), an endemic species to the geyser basins of Yellowstone, east of Old Faithful.

Hazard trees were surveyed and removed from Slough Creek Campground. Wind gusts (reported at 95 mph on Mt. Washburn) on August 8 resulted in 583 trees falling in park developed areas, causing four personal injuries and 29 incidents of property damage totaling an estimated \$54,000. The vegetation biologist assisted in updating the park's Exotic Vegetation Management Plan and EA, and arranged for the transfer of \$1,200 from concessionaires for exotic vegetation control.

Monitoring of aspen seedlings continued on 15 postburn sites to determine heights, browse intensity, mortality, and density. Vegetation biologist Roy Renkin continued to analyze data in preparation for publication. Blister rust/whitebark pine incidence plots, established in the 1960s and last surveyed in 1978, were revisited with biologists from the USGS as part of a study of whitebark pine. The incidence of blister rust and whitebark pine mortality attributed to blister rust remain relatively low.

Water Quality. Park staff continued to work with NPS Water Resource Division staff to implement the MT/NPS Reserved Water Rights Compact. Stream flow, pH, and conductivity were monitored at the gauging station on Soda Butte Creek. A permanent gauging station was installed to protect the equipment for long-term use. Staff reviewed 27 groundwater well permit applications within the Yellowstone Controlled Groundwater area.

Wetlands. Through an agreement with the USFWS, 46 of 78 draft National Wetland Inventory Maps were completed for the north half of the park. Each 1:24,000 scale map shows wetland delineations and classifications on a 7.5-minute USGS topographic quadrangle base. Wetlands were mapped and described along the Northeast Entrance road and on the Grand Loop from Arnica Creek to Little Thumb Creek and Lake Junction to Bridge Bay.

Wildlife Surveys and Management. In 1996, 131 large mammals were fatally struck by vehicles within the park, mostly elk (49%) and mule deer (19%). Although U.S. Highway #191 comprises only about 7% of the paved roads in the park, as usual it accounted for a disproportionate share of the road-kills (36%). Large mammal carcasses (218 total) were assessed for safety and left on site, collected for feeding penned wolves or for research trapping of bears, moved, or sent to research laboratories, as appropriate. DNA samples from 5 coyotes and 4 moose, and an unknown number of grizzly bears (174 hair samples) were collected for addition to the park's long-term database on wildlife health, and for a cooperative study to develop an alternate method for estimating minimum grizzly bear population numbers and densities.

Animals captured and translocated or removed for human or animal welfare reasons included a coyote, a red fox, and two bull elk who had gotten netting entangled in their antlers. Biologists collected 207 reports of rare animal sightings, including mountain lions, wolverines, and non-native mountain goats.

Winter Air Quality. Due to concerns about human health hazards from high levels of snowmobile use, park staff collected and analyzed ambient air samples for carbon monoxide around the West Entrance between February 3 and March 17, 1996. During some sampling periods, the Montana one-hour standard for carbon monoxide (CO) was reached or exceeded.

OTHER ACTIVITIES

Planning issues. Under the direction of John Sacklin, planning and compliance staff worked on additional projects related to transportation planning, park housing, commercial services, and accessibility. A contract study was underway to help the park take a more in-depth look at the Canyon Junction to Tower Junction (Dunraven Pass) road segment and compare road width alternatives, vehicle size restrictions, and/or alternative modes of transportation, such as a cost-effective shuttle or tour bus system, to provide improved access for visitors in oversized vehicles and to facilitate improved interpretation.

The accessibility inventory of all public buildings and programs was completed in 1996, and the park now has a system that records the status of buildings. Park and concessions staff made significant improvements in the accessibility of facilities, including restrooms at the Tower and Canyon service stations, at Canyon and Bridge Bay campgrounds, and next to the Lake General Store; a picnic site at the Old Faithful east lot picnic area; and through construction of a new, fully accessible Old Faithful clinic and ranger station.

The "Greening" of Yellowstone. Planning staff helped coordinate the "Greening of Yellowstone" workshop held in October in West Yellowstone, Montana. The purpose of the workshop was to foster partnerships and share information on how to improve energy efficiency, recycling, sustainable design, and other environmentally friendly activities. The workshop brought together 130 people to discuss Building Materials and Design, Alternative Fuels, Alternative Transportation, Energy, and Waste Management. Work on follow-up newsletters and the workshop proceedings was underway at year's end. Park staff from several divisions, including the YCR and the Division of Maintenance, participated in the conference, and YCR publications staff helped produce a newsletter about the conference discussions.

Research Coordination. During 1996, 271 research projects were active, including 54 new authorizations. YCR's research coordinator, Bob Lindstrom, spent nearly full time issuing and renewing research permits, informing researchers about with park regulations, handling logistical coordination (arranging for quarters, transportation, equipment maintenance, horse packers, etc.), and collecting and producing the annual report of research activities in the park.

A workshop on "Conservation and Sustainable Use of Thermophilic Biodiversity" was conducted by the National Biodiversity Institute of Costa Rica (INBio) and the World Foundation for Environment and Development in January, 1996. Participants from the NPS, the biotechnology industry, and the academic community investigated profit sharing and management of genetic resources in Costa Rica, where research of biological resources is promoted to generate funding for habitat preservation. Discussions focused on the issue of intellectual property rights and remuneration to YNP of royalties from profitable research specimens.

Spatial Analysis. The Center's former Branch of Advanced Resource Technology (BART) was reformed into the Spatial Analysis Center, home to the park's geographic information system (GIS), soil information support, and the beginnings of a park resource database system. Their main responsibility was the acquisition, analysis, organization, presentation, and storage of information about cultural and natural resources of the park and greater Yellowstone. In 1996, the center vastly increased its information storage capabilities with the purchase of nine more gigabytes of hard disk space. They also purchased a CD-recorder which can be used to create CDs and distribute park data sets to external users, and added two fast PCs to the system which can be used for database development, graphics and slide production, and the new ArcView desktop GIS package, which will give staff the ability to make maps and query data without having to know the operating system.

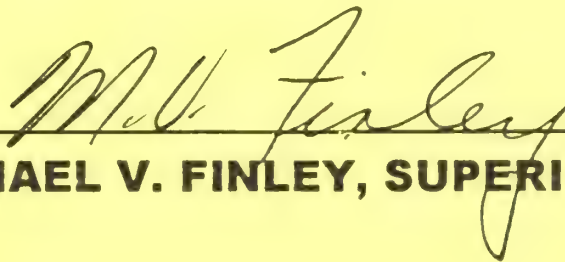
Ann Rodman, Eric Compas, and other staff provided information and support for numerous park projects and needs, including road reconstruction assessments, exotic plant dispersal analysis, geothermal map revisions, winter visitor use management, lake trout habitat identification, wolf location analysis, and maps for the Yellowstone paleontological survey.

Resource Information. The quarterly magazine *Yellowstone Science*, completed its fourth year of publication and made a smooth transition as creator and original senior editor Paul Schullery moved on to other professional pursuits and Sue Consolo Murphy assumed the lead for resource publications. Donations paid for approximately 25 percent of the annual printing costs, the rest of which were paid through a grant from the Yellowstone Association. Other publications included five issues of the resource management newsletter, *The Buffalo Chip*, and six issues of *The Wolf Tracker*. A series of special resource reports was formalized and reports were produced addressing pronghorn distribution, grazing and competition in grasslands, sagebrush dynamics and ungulate use, a survey of thermophilic microorganisms, and the *Soils of Yellowstone National Park* and the *Landforms of Yellowstone National Park*. YCR annual reports for activities in calendar years 1994 and 1995 were produced and distributed. External assistance was provided to the USFWS to edit, design, and print their *1995 Annual Report of the Rocky Mountain Interagency Wolf Recovery Program*. Sarah Broadbent completed a long-term project indexing past issues of *Forest and Stream*, and references to Yellowstone's history were made available in a computer bibliography at the park's research library.

The Resources Interpreter, Norm Bishop, and other professional YCR staff presented more than 150 illustrated programs on such topics as wolf restoration, fire ecology, ecology of the northern range, grizzly bear ecology and management, other carnivores, small mammals, the lake trout invasion, and native and exotic plants. They gave 50 interviews on resource topics, hosted 50 additional visits by interested persons, and answered more than 1000 written requests for resource information. They arranged special seminars on grizzly bear research, an update on the lake trout invasion, and results of archaeologic excavation of the historic Fountain Soldier Station, and evidence of early native American uses in Yellowstone.

SUPERINTENDENT'S ANNUAL REPORT

**YELLOWSTONE NATIONAL PARK
1997**

A handwritten signature in dark ink, reading "M. V. Finley", is positioned above a horizontal line. The signature is written in a cursive, flowing style.

MICHAEL V. FINLEY, SUPERINTENDENT

YELLOWSTONE
NATIONAL PARK
COPY
CC 111

SUPERINTENDENT'S FOREWARD

1997 marked the 125th birthday of Yellowstone National Park. As you read through this report and, in particular, the Public Affairs section, you will note the many special events that occurred to celebrate this watershed year. Writer and conservationist, Wallace Stegner, gave apt notoriety to the national parks calling them "The Best Idea America Ever Had," and the park used this quote throughout the year on posters and publications.

The Superintendent's Office staff included Michael V. Finley, Superintendent; Marv Jensen, Assistant Superintendent (hired in December 1995); Jean Nuetzel, Administrative Assistant; and Janice Laye, Secretary.

Superintendent Finley was extremely busy making 27 trips throughout the calendar year totaling approximately 123 days. His trips included Costa Rica in May in connection with President Clinton's celebration of Costa Rica's national parks and to continue our dialogue with their bioprospecting policy experts and Russia in July (at their invitation) to serve as an informal ambassador of the American conservation movement.

Mike attended many meetings in Helena, Denver, and Washington, D.C. dealing with the Interim Bison Management Plan; this particular issue continues to take an inordinate amount of staff time. Additionally, he also attended meetings on tourism initiatives at the behest of Montana Governor Marc Racicot. Mike was asked to be a guest speaker at the annual Outdoor Writers Association meeting in Orlando, Florida, and was also asked to speak at an Interagency Fire Management training held in Boise, Idaho. Assistant Superintendent Jensen shared many other meeting commitments dealing with such issues as "Greening," maintenance of the Beartooth Highway, overflight policies for the National Park Service, gateway community concerns, etc., and his calendar was similarly busy.

The Superintendent and Assistant Superintendent hosted many special visits including but not limited to Vice President Al Gore, House Speaker Newt Gingrich, and General Norman Schwarzkopf. All this in addition to their park operations responsibilities.

Weekly staff meetings and resource councils were held on as regular a basis as schedules would allow. Minutes from those staff meeting are available in the Archives.

Three ALL EMPLOYEES meetings were held in January (Mammoth Rec Hall), July (Lake Lodge Rec Hall), and August (Mammoth Rec Hall in conjunction with a visit by Director Stanton). The purpose of these meetings function as an opportunity for the Superintendent to update park employees on "front burner" issues, distribute length of service awards, and recognize individuals for special achievements and/or awards.

The Superintendent's Office continues to make reservations for the Mammoth Chapel, and in the 1997 calendar year, there were 21 weddings held at \$100/reservation.

Table of Contents

Administration	1
Concessions Management	14
Interpretation	17
Maintenance	22
Public Affairs	40
Planning and Compliance	46
Resource Management Operations and Visitor Protection	50
Yellowstone Center for Resources	66

ADMINISTRATION

FY 96 Budget Overview

This Section was inadvertently omitted from the 1996 Superintendent's report and is included here for contextual purposes.

1996 marked a very interesting and tough year for Yellowstone managers. Faced with another year of effectively flat budgets and having already exhausted cost saving measures that spared the park's visitors, Yellowstone's management team was faced with very tough decisions. During FYs 94 and 95, park managers had already cut an effective \$1.3 million dollars from the operation by reducing discretionary spending and lapsing (leaving vacant) permanent positions. During FY 95, travel costs were reduced by 44% from 1992 levels, transportation by 55%, printing by 60%, and other services by 50%. Trying to balance an operating deficit without impacting personnel services, which accounts for 75% of the operating budget, was no longer an option in 1996.

Compounding problems associated with receiving operating increases that did not keep pace with inflation was the fact that Congress and the administration did not approve the NPS budget until the summer season started. With over half the fiscal year finished, many cost saving options, like reducing the winter season's services were no longer available to park managers.

Needing to cut an additional \$.9 million to balance the budget, park managers again examined discretionary spending and lapses to positions. During budget sessions, Superintendent Finley mapped a clear course by which managers should face tough budget decisions. In his February memorandum, Superintendent Finley stated "The park operation must be viewed as we view our bodies – it does no good to have a healthy heart if the lungs don't work. . . In other words, it is often impossible to cut out or reduce an activity beyond its capacity to function and not adversely affect other park operations." The Superintendent also reminded managers that their priorities must first address statutory mandates.

After exhausting other options, park managers were forced to make cuts that would impact visitor services. Due to the savings that could be achieved by closing an entire developed area and recognizing that campgrounds are a service that the park provides as an added benefit but not as a primary attraction, park managers decided to close the Norris campground, visitor center, and museums. Managers decided to leave the Geyser Basin open for self-guided walks in order to minimize the impact on the park's visitors.

Superintendent Finley and the park received national attention for this decision. In fact, the decision prompted several visits from senior Washington staff. Congresswoman Cubin, Senator Thomas, and Congressman Hansen sent a senior staff member, Steve Hodapp, to investigate the means by which Yellowstone managers identify, evaluate, and assess budget priorities. Congress also asked the General Accounting Office (GAO) to examine the budget-setting priorities within the National Park Service.

During these visits, park managers had the opportunity to demonstrate that Yellowstone, like the National Park Service, has not fared well in recent years from a budget perspective. Yellowstone's base budget rose only 4% over inflation during the last decade, while visitation increased by almost 30%. Winter and shoulder season visitation increased by almost 75%. Yellowstone managers demonstrated that this small increase was clearly insufficient to cover both increased mandates and new programs.

Luckily, year-end money unused by Regional programs were made available for Yellowstone during the last two weeks of the fiscal year. Almost half a million dollars of such money kept the park in the black and enabled us to carry over \$200,000.

FY 1997 Budget Overview

Operations:

Despite a relatively healthy 4.5% base increase, FY 97 began looking almost as bleak as FY 96. Congress and the Administration approved a \$947,000 increase to Yellowstone's base budget. As is often the case, however, inflation, reductions in non-base funding sources that were used in the previous year for operations, and additional mandates eroded the park's net purchasing power from this increase. The table below demonstrates the net impact to park operations:

FY '97 ONPS Base Increase	\$947,000
Law Enforcement Retirement Program Withdrawal ⁱ	(278,000)
Training Reprogramming ⁱⁱ	(19,000)
ONPS Base Increase Net of National Adjustments	\$650,000
Regional Reprogramming	(6,690)
Net ONPS Base Increase to Park	\$643,310
Classified Pay Increase (2.97%)	(433,290)
Non-personnel Inflation (4%)	(194,200)
Park ONPS Base Increase Net of Inflation	\$15,820
NRPP Project Reduction ⁱⁱⁱ	(300,000)
Cyclic Maintenance and Repair/Rehabilitation Reprogramming ^{iv}	(570,000)
Net Change to Park ONPS Funding	(\$854,180)
Interim Bison Management Plan Compliance ^v	(50,000)
Open Norris Campground	(72,100)
Overtime to Snowplow Crews ^{vi}	(125,000)
Leadership Training ^{vii}	(13,500)
Change to Park ONPS Funding Net of Commitments	(\$1,247,780)

NPS leadership in Washington dictated that the park reopen the Norris campground and museums in FY 97, eliminating one of the park's earlier cost-saving decisions and contributing to an incremental \$1.2 million operating shortfall. The financial picture would have been \$133,000 worse if park managers complied with a Department of Interior policy that required an external company to provide limited background investigations for seasonal law enforcement staff (as in years past, the park used in-house criminal investigators to conduct these routine investigations).

The table below demonstrates Yellowstone's cumulative operational shortfall as a result of the FY 97 budget:

Fiscal Year	Cumulative Operational Shortfall (from FY 94 levels)
1995	\$1.3 million
1996	\$2.1 million
1997	\$3.3 million

In order to prevent further erosion to prior years' levels of services, additional *operational* funding was necessary, and only one source was available – fee demonstration funding.

Fee Demonstration Program

In FY 97, the National Park Service began implementation of the Fee Demonstration Program, a Congressionally authorized program permitting park units to keep a portion of the revenue that they generate. With this authority, Congress demonstrated an understanding of the fiscal realities that parks like Yellowstone face. As part of this program, Yellowstone raised its entrance fees, a change that disturbed very few park visitors.

The fee demonstration program was designed to enhance the sources of funding available to deal with backlogs of *infrastructure-related* projects: projects like rebuilding and maintaining deteriorating roads and historical structures. Reality dictated that Yellowstone managers could not raise entrance fees while cutting operating programs so visible to the public. As a result, Yellowstone managers decided to use a portion of the revenue from the fee demonstration program to close the operating shortfall. While this concept received lukewarm support at the Regional and National levels, the park's congressional constituency understood the situation. One of these, Congresswoman Cubin, even reported to the Comptroller that a quote from the house committee report was inserted to help parks like Yellowstone make a case for temporary use of fee demonstration funding to cover operations: "...the Committee wants to emphasize that these funds are to be used primarily to reduce the backlog maintenance requirements. The Committee understands that some projects may be necessary to enhance visitor services and safety and demonstrate to the public that their dollars are being spent wisely."

Yellowstone collected \$6.77 million in entrance/user fees in this fiscal year. Golden Eagle sales, 50% of which remain in the park and 50% of which benefit national programs, totaled \$514,000. After subtracting our Golden Eagle sales and the FY 94 target (\$3.4 million), Yellowstone netted \$2.8 million. Of this, Yellowstone received 80%, or \$2.25 million for park projects.

Of this \$2.25 million, we authorized projects worth an estimated \$1.9 million, and we have obligated roughly \$1.6 million toward the completion of these projects. The projects were deliberately selected to benefit our public and protect our resources by reducing the backlogs caused by insufficient past budgets. Projects included additional

road work, building stabilization, utility system repairs, rehabilitation of public restrooms, the bison exhibit at Canyon, dock repair at Lake, and work on the Cutthroat Trout problems. Unobligated balances remained in park accounts for use in future years.

The Business Plan

As with last year, a variety of high ranking officials visited the park to determine the veracity of Yellowstone's reported budgetary shortfalls. GAO representatives visited the park during the winter season to review Yellowstone's budget prioritization process. In their report, GAO noted that other parks also faced extensive cutbacks during FY 96 and that cuts to visitor services were relatively small when compared with reductions in other activities like maintenance and administration.¹

Later in the year, the Office of Management and Budget's (OMB) Deputy Associate Director for Natural Resources, Ron Cogswell, and the Undersecretary for Fish, Wildlife and Parks Designee (later appointed), Don Barry, both visited the park, listened to park managers, and discussed their plans to make the NPS budget problems a priority in the coming years. Wyoming's Congresswoman Cubin and Senator Thomas also continued to express their interest in helping with Yellowstone's financial problems during summer visits to the park.

To facilitate the process of educating our stakeholders, Yellowstone staff worked with the Kendall Foundation to begin the process of creating a business plan. This document is intended to complement the park's Government Performance and Results Act (GPRA) strategic plans and to show in auditable detail the total financial need.

Total Budgetary Resources

The table on the following page displays the funding available to Yellowstone during FY 97:

¹ Park Service: Managing for Results Could Strengthen Accountability (GAO/RCED-97-125, April 1997).

Appropriated Funds	Dollars
Base funding	\$ 20,102,000.00
Regional & Servicewide ONPS Projects	\$ 1,396,500.00
Federal Highways Support	\$ 1,256,050.00
Equipment Replacement	\$ 676,851.30
Housing Rehabilitation (408)	\$ 2,421,048.52
Emergency Construction (405)	
Construction (402& 404)	\$ 13,853.00
Fire Pre-suppression	\$ 593,966.00
<i>Total Appropriated Funding</i>	<i>\$ 25,866,302.82</i>
Other Funds	
Fee Collection	\$ 750,000.00
Schools	\$ 780,000.00
Concessions CIP	\$ 4,590,912.00
Concessions CMP	\$ 4,164,565.00
Yellowstone Association	\$ 600,000.00
Donations	\$ 448,861.51
Special Use Fees	\$ 811,607.43
Fee Demonstration	\$ 1,870,600.00
<i>Total Other Funding</i>	<i>\$ 12,145,945.94</i>
Total Funding	\$ 38,012,248.76

Park managers continued to place a great deal of their financial management resources obtaining non-base sources of funding. Some of this money came from a variety of Regional and Servicewide programs as depicted in the table below:

Program	1996	1997
Cyclic Repair/Rehab	431,400	629,800
Repair/Rehabilitation	947,700	216,600
Hazardous Waste	209,200	80,000
NRPP	442,000	211,700
CRPP	118,500	104,400
Water Resources	119,800	
Collections Management	28,000	104,000
Volunteers in Parks	10,300	10,500
Air Quality	10,500	10,500
Public Health	23,200	26,000
Cost Sharing	17,000	
Drug Program	8,000	3,000
Other	10,000	
Total	2,375,600	1,396,500

1996 figures are included to display the sharp reduction in NRPP, cyclic and repair rehabilitation

Administration

The position of Administrative Officer (Chief of Administration) was filled through a reorganization that moved the Management Analyst position from the Superintendent's Office to the Division of Administration. The incumbent, Gail Menard, assumed the responsibilities of the Administrative Officer position and responsibility for management of the division.

The division budget for FY 97 was:

ONPS	\$2,187,600
VIP	<u>8,300</u>
	\$2,195,900

Personnel

There were many changes in the Personnel/Payroll Office in 1997. The reorganization plan was approved February 14 and, subsequently, Maribeth Wuertz was promoted to Personnel Management Specialist GS-11 with responsibility for servicing YCR and Maintenance and maintaining the clerical register. Vanessa Ford was reclassified from Staffing Specialist to Personnel Management Specialist with responsibility for servicing the Superintendent's Office, Administration, the Ranger Division and the Interpretation Division. The reorganization also allowed us to hire Patty Oestreich as a permanent part-time Personnel Clerk. Andy Ludwig was promoted to a GS-6/7 Administrative Support Assistant, and Brenda Tupek transferred in from Mesa Verde to a parallel position.

Over 2,550 personnel actions were processed; this was about on a par with 1996. Eighty-three vacancy announcements and recruit bulletins were issued, and the office received 2,166 applications for jobs; 465 applications were received for the seasonal ranger certificates. The clerical test was given twice helping locals establish eligibility for permanent Federal jobs.

Tracking job applications was made simpler by Patty Oestreich's development of an ACCESS system to record incoming applications and track them through qualification reviews, rating and ranking, selection, and letters of selection and non-selection. Once the Personnel Office computers are upgraded, the entire staff will be able to pull up ACCESS and check the status of any application.

The staff classified 18 positions with desk audits and about 30 other routine classification reviews.

One hundred and thirty-nine OWCP claims and thirteen retirements were processed. The office dealt with six employee relations issues with seasonal employees.

Three cases were appealed to MSPB--two removals and a downgrade and reassignment. One of these cases was settled in 1997. The other two were still unresolved at the end of the year. In October, a former employee filed suit against the park for intolerable working conditions; the case is pending. One supervisor issued a letter of warning to a permanent employee. Two internal EO complaints were satisfactorily resolved at the informal level.

The Personnel Officer, in conjunction with an Assistant Division Chief, worked throughout the year with an outside mediator to resolve a work-related conflict. The process pointed out the strengths and weaknesses of mediation.

The Personnel Officer began an evaluation of the Employees' Assistance Program (EAP) contract.

Timekeepers were taught a new, automated time and attendance system which eventually will lead to timekeepers submitting time and attendance records directly to the central payroll office.

The DOI Drug Program Officer conducted a random, on-site drug test in the park in June. One employee tested positive and was removed.

Three labor-management meetings were held with union officials. Two were held in Mammoth, one in May and one in December, and another was held at Old Faithful in July. Ted Jensen, the new IBEW representative, was introduced.

Computer Support Services

The Supervisory Computer Specialist position, vacant since 1991, was filled by Michael Kirby in June. The branch name was changed from Automated Data Processing (ADP) to Computer Support Services (CSS) to reflect their new proactive direction towards the 21st century.

The CSS team made great strides towards moving Yellowstone into a new era of computing. Over half of the Administration Building was put on a new Ethernet Network allowing access to the Internet and a new Yellowstone Intranet. The Supply building, Fire Cache building, and a portion of the YCR building were also put on the new Intranet/Internet. All but three of the interior sites were given dial-up connections to the Intranet/Internet via six TCP/IP ports on a Cisco router.

User support and training-related functions continued to consume a major portion of the CSS team's workload. The NPS changed the software standard from WordPerfect to Microsoft Word, with a mandatory implementation date of November 1. Several formal training sessions were provided in the park for employees including Windows95 and Windows Office, Word, Excel, Access, and Webpage design. To enable employees to use the new software, over eighty new computers were purchased along with twenty

printers, network cards, supplies, hubs, and all needed peripheral equipment. The CSS staff also upgraded 20 486 computers along with 60 Windows95 and Office Pro upgrades.

New NT Servers were set up; one to run the Intranet and DNS Server and one to run the CCMail main post office for Yellowstone.

New modules for the Backcountry program were added, the VSO database was moved from DbaseIII to Access, the Supply program was analyzed and replaced with an "off the shelf" program, and new programs were written using the new Visual Suite by Microsoft.

Telecommunications

Several personnel actions took place in the Telecommunication Shop in 1997. Two employees were added to the staff—Robert Tupek in January and Michelle Kerns in June. John Darr's position was upgraded from a GS-09 to WG-11 position in June, and Gary Matthew's position was changed from temporary status to a permanent, career conditional position in August.

Additional floor space became available when the Fire Cache moved to a new location in 1996. Telecommunications staff worked on the Office Renovation Project throughout 1997. By the end of December, the project was about 80% complete.

Starting in early spring, telecommunications staff installed 12 cash registers and associated telephone lines and modems at the park's five entrance stations. They continued throughout the year to provide technical support to the Visitor Service's Office for the maintenance and repair of the new "smart" cash registers. In addition, staff installed an alarm system at the new West Entrance 4-plex and provided engineering assistance to the Bureau of Land Management for the development of an alarm system at Pompey's Pillar.

In August, Noel Newberg and Kyle Sinclair from U.S. Fish & Wildlife Service's Denver office, traveled to the park to assist Telecommunications employees in evaluating the park's existing radio system. Computerized radio frequency coverage path analysis was done to identify which mountain peaks (located both within and outside park boundaries) would best serve for repeater locations. Data collected during the process will be invaluable in planning and implementing the Yellowstone Park Radio Renovation Project, which will enable the park to make the transition from the existing analog system to a digital, narrow-band, radio system by 2005 (as required by federal law). Project work scheduled for 1998 will significantly improve park radio coverage.

In addition to its day-to-day responsibilities, the shop's audio/visual division coordinated the installation of sound systems for the Vice Presidential visit and the 125th celebration at Old Faithful. Sound and video systems support was provided for the "All Employees" meetings and the Scientific Conference.

CommNet Cellular was issued a “Temporary Special Use” permit to install a cellular site on Mount Washburn. In addition, CommNet applied for an *Initial Application* to install a cellular site at Elk Plaza. During 1997, Telecommunications performed all administrative and permit issuance functions associated with all cellular telephone services in Yellowstone Park.

The Telecommunications Shop continued with “Phase 3” of their Upper Mammoth Project to connect the buildings in the vicinity of the Administration Building with fiber optic and copper telephone cable. Staff also continued the work started in 1996 to renovate and replace outdated telephone/computer wiring with “Category 5” wire. (Category 5 wire is the highest speed data transmission medium available for indoor applications.) Buildings wired with Category 5 wire during 1997 were the South Entrance duplex, the East Entrance four-plex, the Canteen, the Chittenden House, the Maintenance Garage, the Mammoth Clinic, and the Telecommunications Office. In addition, offices wired within the Administration Building included the Mail Room, Communications Center, Superintendent, and Public Affairs.

An extensive amount of telephone work was also completed. Meridian key telephone systems were installed at South Entrance, the Fire Cache, and the Mammoth Clinic. Office personnel tracked and paid NPS phone bills totaling more than \$25,000 per month.

Work accomplished through the Upper Mammoth Cable Project saved the park \$49,840 in telephone installation charges and reduced the park’s monthly telephone bill by \$4,783.

Office Support Services

This was a year of “cleanup and fix up” for the Office Support Services operation. Central files dispositions were made according to NPS 19, and the central files/office area was rearranged to create a more effective work space area.

After attending a workshop for business mailers, the staff learned ways to cut costs of mailings. Office Supervisor Judy Jensen researched our bulk mail situation and wrote a bulk mail plan. An envelope printer and SmartMailer program were ordered with end-of-year funds. Use of new equipment and software will result in a savings of employee time in doing bulk mailings as well as postage costs. The staff handled 81,698 pieces of outgoing mail.

The color copier was replaced with a new and improved model for less per year than we were paying just for maintenance on the old one.

The Xerox 5100 copiers were nearing the end of the Lease to Own Plan (LTOP), and their useful life. We contracted LTOP for new, upgraded machines with a lower monthly

payment. The new 5800 Xerox copiers improve efficiency in handling the ever-increasing load of copy requests.

The staff coordinated the painting and new carpeting with the delivery of the new copiers. They also took that opportunity to remove equipment not being used. This was a real "morale-booster" for the Office Support Services staff and provides a pleasant, efficient work environment for all employees who use the equipment in the mailroom.

Financial Services

During FY 97, the Financial Services Office implemented the reorganization put in place last year. Customers, in general, reported a dramatic improvement in customer service from office staff. Much of this feedback is due to the office's commitment to paying travel vouchers within one week of receiving documentation. The financial services office sponsored parkwide training in travel processes and procedures.

Other major projects the office undertook were development of the park's business plan and building a status of funds database that accurately reports fund status and easily provides query access. This database was instrumental to ensuring a successful annual close (all but \$1.25 of our annual base dollars were successfully obligated), and future plans include putting this system on the Intranet for other managers to use (thus eliminating the duplication of effort in operating divisions).

Workload statistics for the Financial Services Office included:

- 1,400 travel vouchers
- 750 vendor payments
- 2,204 third party drafts
- 817 bills for collection and 755 receipts
- 718 deposits totaling over \$11,520,460

The staff coordinated the establishment and monitoring of 600 accounts in 15 different funding sources.

Contracting and Property Management

There were two classes offered on the IMPAC Visa cards. Use of cards is continuing to expand. There are 48 cards issued to park employees. IMPAC cards are being used extensively by procurement and supply center personnel.

Two positions were filled in FY 97. The Accounting Tech position, vacated by Diana Schall, was filled with one of the Material Handlers, Dennis Zafft. This reassignment created another vacancy which was filled by an employee from the Maintenance Division, Jane Cunningham. The Property office also had a seasonal laborer position during the summer months.

Contracting/Procurement

Over 6,700 requisitions were processed totaling approximately \$7.7 million as follows:

Thirty-four contract actions reported on SF-279s. (Two contracts for \$330,415 were awarded to minority owned businesses.)

9 new awards	
2 services	\$ 77,040
4 supply contracts,	\$ 841,766
3 construction	\$ 927,176
16 contract modification	\$ 163,117
18 task orders	\$ 196,519
	<u>\$2,205,617</u>

Agreements:

3 Interagency Agreements	\$ 14,800
2 Cooperative Agreements	\$ 0
31 Mods & Work Orders	<u>\$1,511,344</u>
	<u>\$1,526,144</u>

Small Purchases:

Type	Quantity	Dollar Amount
Purchase orders	702	\$1,932,248.77
Blanket Purchase Orders	38	373,535.11
Third Party Drafts	1,050	694,535.58
Imprest Fund	5	63.92
GSA Advantage/Muffin	302	243,269.13
IMPAC - VISA	<u>2,441</u>	<u>757,645.00</u>
		<u>\$4,001,297.51</u>

Supply Center Activities

The Supply Center implemented a new computerized tracking system (ATREX) for the supply stores stock replacing the outdated Data Point system.

Total Sales - \$591,176. This figure decreased from previous years due to moving the fuel costs out of high cost sale.

The supply operation recycled 107 bales of corrugated cardboard, totaling 17,768 pounds. Cardboard recycling continues to increase every year.

Property Management

We acquired over \$561,179 in excess property items including computers, busses, cellular phones, radios, and many other miscellaneous items.

In cooperation with the Ranger Division, over 6,000 lost and found items were processed. The operation involved donations to Community Hope, conversion of items to government property, and sale of remaining items at the annual GSA action.

Other workload statistics included:

Reports of Survey (DI-103)	146
Report of Excess Property (SF-120)	25
Report of Excess Property for Sale (SF-126)	80
Transfer of Property (DI-104)	15
Receiving Reports (DI-102)	12

Current Property Status

	<u>Number of Items</u>	<u>Value</u>
NPS	8,794	\$24,925,470.38
TWRS	2,830	\$ 5,161,446.37

In September, GSA came to Yellowstone National Park to conduct a GSA auction. There were 210 items sold for \$149,998.

ⁱ Reflects funding previously identified as an increase to Yellowstone's base to partially offset the additional expenses of the congressionally authorized enhanced annuity retirement program for law enforcement and fire department personnel. NPS withdrew this funding to manage the program at a national level.

ⁱⁱ The fiscal 1997 budget authorized by Congress did not fund a \$3.5 million proposed increase for the NPS Training Initiative; however, appropriation language permitted a permanent reprogramming. This amount represents Yellowstone's share of this reprogramming.

ⁱⁱⁱ Project money that was allocated to Yellowstone during the last three years for reclaiming the Stephen's Creek area. Yellowstone managers, with WASO approval redirected this money to cover operational deficiencies in fiscal years '95 and '96.

^{iv} In the last six years, Yellowstone has successfully competed for approximately \$1.4 million per year in this Regionally managed program. Money from Yellowstone's "winning" projects was reallocated at the cluster level to a Grand Teton roofing project.

^v Yellowstone managers spent around \$200,000 building facilities and capturing/testing bison leaving the park's northern boundary. \$150,000 of this was provided from a Regional contingency account.

^{vi} The amount necessary to meet OMB's directive that park staff plow the Beartooth Highway by Memorial Day.

^{vii} Represents the tuition costs to Yellowstone for providing mandatory leadership training to 27 supervisors. Had the park fully complied with a directive to send all supervisors to this training, an additional \$47,000 would have been spent. The park minimized travel costs by having this training in Mammoth.

CONCESSIONS MANAGEMENT

Staffing

Chief, Concessions Management, GS-1101-14/4, Edna Good
 Asst. Chief Concessions Management, GS-1101-12/6, Judy Churchwell
 Concessions Specialist (Spec. Accounts/Projects), GS-1101-11/5, Mary Murphy
 Concessions Specialist (Evaluation/Pricing), GS-1101-9/3, Barb Riley
 Park Ranger (Conc. Spec.) (Eval/Compl.), GS-1101-11/3, Doug Lentz
 Concessions Assistant (Ofc.Mgr.), GS-1101-6/4(STF) Patty Kremer
 Concessions Assistant (Projects), GS-1101-5/5, Debby Young
 Sanitarian, GS-0688-11/4, Sara Roser (STF)
 Engineer, **Temp. PT**, GS-0830-9/1, Mary Hudson

Budget

ONPS	\$353,600
USPS	<u>26,000</u>
TOTAL	\$379,600

General

Gross revenues earned by all concessioners exceeded \$71 million. Concessioners' Annual Financial Reports were reviewed ensuring their audit by a certified public accountant, and franchise, building use, and special account fees were properly calculated.

This division identified, prioritized, and monitored projects and accounts amounting to over \$10 million. In addition, government-owned personal property assigned to concessioners, valued at approximately \$5 million, was managed according to federal regulations.

Approximately 260 formal and informal inspections were conducted in guest and employee facilities in the park. Public health inspections were conducted of all food service facilities, water/sewer systems, shower facilities, hot tubs, etc., to ensure compliance with United States Public Health Service USPHS standards. Rates for all services and activities were approved according to Servicewide guidelines.

Most concessioners received satisfactory annual ratings for contract compliance, operations, safety, and sanitation. Concessioners rated unsatisfactory for contract compliance and marginal overall were Yellowstone Park Medical Services, Ace Snowmobile Rentals, Loomis Enterprises, Inc., Gary Fales Outfitting, and Pahaska Tepee.

Orientation programs were presented to approximately 3,000 seasonal concession employees during May and June. A uniformed representative of the division presented NPS philosophy, mission, regulations, safety, and requirements pertinent to living and working in Yellowstone.

Work continued on development of a Commercial Services Management Plan. The plan is intended to guide the park in development of concession contracts that will expire between 1999 and 2002.

Amfac Parks and Resorts, Incorporated

Amfac Parks and Resorts, Inc. had a successful year after having returned the reservations function to Yellowstone. They were supportive and generous in their support of the 125th Anniversary events throughout the summer and continued their support for community activities, particularly the local day care. The contractually required franchise fee reconsideration resulted in an agreement which provided \$6.2 million in capital toward the completion of the new Snow Lodge at Old Faithful. The concessioner will depreciate \$3.1 million over the remaining term of their contract, and their obligation to the capital improvement account will be reduced by \$1.55 million for the years 2000 and 2001. The result of this arrangement is that the concessioner will hold no possessory interest in the new Snow Lodge when the concession contract expires in 2001. In addition, the concessioner agreed to accept responsibility for funding the purchase of guest mattresses (\$100,000 annually) that was formerly funded by the cyclic maintenance account.

The construction of Phase I of the Old Faithful Snow Lodge began in April and is expected to be complete in late June. The demolition of the old Snow Lodge will begin in April 1998 to enable construction of Phase II. Phase II is expected to be complete by the end of May 1999. In order to "clean up" the streetscape in the Old Faithful historic district, the Post Office was relocated, and the Photo Shop, ski shop, and Four Seasons fast food will be removed.

1997 projects included:

- Phase I of Old Faithful Snow Lodge
- Boiler upgrade/asbestos removal at Canyon Lodge
- Employee dormitory upgrades
- Guest cabin renovation - Canyon and Old Faithful Lodge
- Safety improvements parkwide
- Underground storage tank replacement
- Equipment replacement
- Campground improvements
- Accessibility improvements parkwide

Hamilton Stores, Incorporated (HSI)

Hamilton Stores continued to provide high quality visitor services. They were supportive of the 125th Anniversary events in the park and developed an exhibit of historical photographs for display at their stores throughout the summer season. No projects were completed with special account funds; however, planning is underway for projects to be completed in 1998. No significant corporate investments are anticipated during the remainder of their contract (expires 9/99). Both Hamilton Stores and the NPS began appraisals of Hamilton's buildings in preparation for the upcoming contracting process.

Yellowstone Park Service Stations (YPSS)

The Joint Venture Agreement under which YPSS is operated expired in October 1996. Hamilton Stores and Amfac have agreed to continue the operation under the same terms until the expiration of Hamilton's contract.

Environmental Protection Agency (EPA) regulations require that underground storage tanks meet EPA standards by December 22, 1998, and that obsolete tanks be removed by that date. With the replacement of USTs at Old Faithful Upper Station this fall, all tanks utilized by YPSS (except those at Fishing Bridge) meet these requirements. Fishing Bridge tanks will be removed in the fall of 1998.

As a part of the replacement of USTs at Old Faithful, the above-ground tanks providing propane heat to the Upper Store and Hamilton's dorms were removed. New propane tanks were buried as part of the Snow Lodge construction enabling removal of the unsightly above-ground tanks.

West Park Hospital, Yellowstone Park Medical Service (YPMS)

In spite of numerous reminders, YPMS failed to submit their annual financial report by the due date and was late in making their annual deposit to their special account (MIP). As a result, their annual overall rating was marginal. We received a significant number of complaints about rates being charged (even though they are approved using a relative value system common to the industry). A review of their coding practices will be conducted during 1998. Because of years of reported financial losses, we requested an audit by the Washington Office CPA, who has made a number of recommendations for cost savings and increased efficiency.

In accordance with the contract, a franchise fee reconsideration will be initiated early in 1998.

YPMS completed construction of a duplex for employee housing at Lake. This \$245,000 project completed the building and improvement program under the contract

INTERPRETATION

Budget

In FY 97, the Division of Interpretation spent \$1,505,831 of the park's total budget. In addition to \$1,123,531 in ONPS funds and \$149,493 in fee enhancement funds, the division received fishing permit fee money (\$88,542), repair/rehab funds for area/site orientation waysides at geothermal self-guiding trails (\$24,959), cyclic funds to replace interpretive signs parkwide (\$24,964), Federal Highways assistance funds (\$94,342). The Expedition: Yellowstone! environmental education program spent \$51,608 in reimbursement fees and \$1,100 was spent in the VIP account.

The Yellowstone Association (YA) continued to play a major role in support of interpretive operations contributing \$115,681. Included in these funds were \$29,466 for interpretive operations support, \$86,215 in direct grants for such projects as exhibit production, publications, VIP housing, and summer interns and SCAs. In addition, YA handled over \$96,071 for the division in restricted account expenditures resulting from donations and income to support Children's Environmental Education, Media/Product Development, the Yellowstone Today visitor information newspaper, the Natural History Handbook, Photo/Slide Collection Management, the Children's Fire Trail, wolf interpretation, the Junior Ranger Program, and March for Parks. Total funds expended for Interpretation from all sources equaled \$1,770,291.

Personnel

The division had 22 full-time positions (16 permanent and 6 term) utilizing 18.77 of the total 40.27 FTE. The division had 67 seasonal positions (21.50 FTE) including 58 summer, 4 winter, 1 media and planning, and 4 environmental education positions.

In addition to NPS staff, the Division of Interpretation benefited from the service of 12 volunteers and 37 other positions including 29 YA sales clerks, 2 SCAs, 1 Kodak employee and 5 student interns. These volunteers and YA employees, working directly in the various interpretive functions of the park, constituted an additional 9.35 FTE.

Chief of Interpretation Ron Thoman transferred to the Intermountain Regional Office to coordinate the region's GPRA efforts and associated strategic planning activities, and Assistant Chief for Operations Tom Tankersley transferred to Harpers Ferry Center as an Interpretive Planner. Ginny Cowan resigned her position as Publications Specialist in March and Dave Cowan resigned his Visual Information Specialist position in August. Vacancy announcements for the Chief of Interpretation position and the two interpretive specialist positions were issued, but all positions remained vacant at the end of the year.

Linda Young served as Acting Chief of Interpretation after Ron's departure and Brian Suderman served as Acting Assistant Chief of Interpretation, Personal Services, from mid-April through September.

Branch of Personal Interpretive Services

"Back to Basics," compelling stories, and honing the focus on primary park resources/controversial issues continued to shape all aspects of interpretation in Yellowstone. Staffing visitor centers, museums, and contact stations continued to be a high priority along with conducting roving interpretation in high visitor use areas. We believe that focused interpretation is the best approach to communicating the most important and fundamental values of Yellowstone National Park to its visitors. This is especially important in light of the nature of the "average" Yellowstone visit which lasts just slightly more than 24 hours.

Division staff provided extensive support for various special events and activities associated with Yellowstone's 125th Anniversary. Interpreters assisted at the July 5th Prairie Home Companion show at Old Faithful, at the August 17th Protectors of Yellowstone celebration at Mammoth, at the August 25th National Parks Day event at Old Faithful, and with various logistical chores associated with the 125th Anniversary Symposium in September. Additionally, special activities were offered to visitors during these events--Brian Suderman and Bob Furhman escorted Vice President Al Gore on a tour of the Upper Terraces, and Ann Deutch traded quips with Garrison Keillor during the Prairie Home Companion broadcast. Jim Peaco and Skip Meehan provided extensive AV support for all events.

Detailed visitor contact information is available in the Annual Interpretive Program Report. Briefly, total visitor contacts tallied 2,235,150. Of these, 232,827 constituted attendance at all formal ranger-led activities or programs (park visitation for 1997 totaled approximately 2.9 million).

Environmental Education (EE)

The park's residential environmental education program, *Expedition: Yellowstone!*, entered its 12th year of operations and its 4th year as a fee-based program. The cost to schools remained the same at \$16/person/night for groups of 30 or more, and \$20 per person for groups smaller than 30. During its four months of operation, 836 students, parents, and teachers participated in the three- and four-day programs in Lamar Valley.

The Junior Ranger program, first implemented in 1992, served over 12,932 children between the ages of five and twelve in its sixth year of operations, an all-time high for the program. The requested donation remained at \$2/child.

The children's summer day camp program, *Exploring Yellowstone*, for children residing in Mammoth, Gardiner, Corwin Springs, Emigrant, and Cooke City, grades K through seven, completed its third season of operations. Fourteen sessions were offered, and 45 children registered to attend classes. A total of 187 students participated in individual sessions. The program was once again funded through a Mammoth School grant (\$6,000) and a \$10 registration fee.

The second Earth Day Yellowstone! educational fair was held at the Gardiner School. Over 350 students (K-8) and adults attended this event from the communities of Gardiner, Mammoth, Corwin Springs, Emigrant, and Cooke City. West Yellowstone School and Ophir School were also invited but did not attend. Nineteen educational stations were offered. The Gardiner Student Council was involved in planning and execution and coordinated a community clean-up following the program.

National Park week programming reached 383 students in the community of Livingston, Montana. Livingston was targeted due to its participation in March for Parks. The program focused on the diversity of the National Park System and Yellowstone's unique resources.

The Requested Educational Services program completed its third year under EE oversight. One hundred and forty-three programs were presented to a diversity of groups serving 5,113 individuals.

The "Exploring Your National Parks Kit" featuring Yellowstone was completed, and 30,000 kits were distributed free to teachers at Target stores nationwide in October. This kit was produced in conjunction with the National Park Foundation and funded by the Eureka Vacuum Co. and Target. Sixty thousand more kits are to be distributed over the next two years. All of Yellowstone's gateway communities as well as numerous regional educators received the kit.

A new outreach program was piloted with the Gardiner School in conjunction with their ski program. Grades 1 through 3 received a field class in winter ecology taught by EE staff. Preprogram and post-program materials and instruction were also provided.

The JASON Project, a nationally renowned science/technology program for elementary and high school students, came to Yellowstone in May and, in conjunction with this effort, the EE Office coordinated eight onsite field trips for local classes (Gardiner, Mammoth, Paradise Valley schools, and Gallatin Gateway) interested in viewing live broadcasts via satellite uplink at the Mammoth Visitor Center and live broadcasts from Old Faithful.

Fieldtrip, a children's television show produced by Allbritton TV Productions (subsidiary of FOX), aired by 80 percent of U.S. syndicates did a show featuring the *Expedition: Yellowstone!* program. Five EE staff members appear on camera providing an excellent

sampling of program activities. The video of the broadcast will serve both orientation and promotional purposes for the program.

The EE Specialist was named to the Greater Yellowstone Stewardship Committee Board of Directors. This West Yellowstone based group is working to provide a diversity of educational opportunities to West Yellowstone and other rural schools on Yellowstone's west side.

Non-Personal Interpretive Services

"Back to Basics" was the guiding principle in prioritizing work on non-personal interpretive services such as publications, wayside/trailsides exhibits, visitor center/museum exhibits, audiovisual media, and advanced interpretive technologies. Total cumulative visitor contacts totaled over 8 million which we consider a very low estimate. (The figure factors in multiple visitor encounters with exhibits, publications, and automated audiovisual programs. Methods of measuring all such contacts are far from complete and/or available within constraints of staffing and budget.) Surveys conducted by Dr. Gary Machlis of the NPS Visitor Services Project indicate the vast majority of Yellowstone visitors use non-personal interpretive services as their primary means of acquiring information, orientation, and interpretation/education.

Over 50 interpretive/educational publications were produced including four issues of the park newspaper *Yellowstone Today*, seven self-guiding trail brochures, various area guides, and specially targeted site bulletins (i.e., such controversial issues as wolf reintroduction/status and bison management). Two special newspaper supplements were produced: one focused on the park's 125th anniversary, and the other highlighted Yellowstone's "Top Ten" most controversial issues. Both were distributed at entrance stations, visitor centers, ranger stations, and from various park offices in response to requests for information via mail. A twelve-page, self-guiding tour booklet was also produced for the new Fort Yellowstone self-guiding trail. Development of Yellowstone's official park handbook continued in partnership with Harpers Ferry Center. A new manuscript was prepared and adjustments made to the publication's graphic platform and associated content. The goal is to print the completed handbook in 1998.

A major new exhibit focusing on the natural history of bison in Yellowstone was planned, designed, and produced in partnership with the Buffalo Bill Historical Center in Cody, Wyoming. This exhibit was dedicated and opened to the public on August 1 as one of the park's highlighted 125th Anniversary events. It proved overwhelming successful; visitation at Canyon Visitor Center (location of the exhibit) jumped from an average of 2,000 people/day prior to the exhibit's opening to almost 5,000 people/day throughout the remainder of the "peak season."

A self-guiding trail through historic Fort Yellowstone was developed including nine trailside interpretive exhibits and a companion tour booklet. Funds for this project were donated by Ed and Harriet Spencer through the Yellowstone Foundation. This new visitor service was dedicated as part of the August 17th Protectors of Yellowstone celebration.

Twenty-five trailside interpretive exhibits were installed throughout Norris Geyser Basin, and new Museum breezeway exhibits were installed along with upgraded light fixtures. This completed a 3-year effort to replace outdated interpretive media in the Norris Geyser Basin area.

Phase I planning and design of orientation interpretive and safety exhibits (18) for the Upper Geyser Basin area was completed; production began in August. Due to production timelines, installation will take place during spring 1998.

Considerable time was spent completing the inventory of the audiovisual cache. A substantial amount of the equipment and other items supporting the audiovisual function in Interpretation was moved to Jim Peaco's control and management; the remainder of the cache was placed in Hank Coleman's domain (Telecommunications). Jim and Hank collaborated in providing audiovisual services for major parkwide events as the Audiovisual Technician position was again lapsed. Demand for photographic services continued on an upward trajectory; special efforts were made to document ongoing wolf reintroduction and bison management activities.

Yellowstone Association

The Division participated in the Yellowstone Association's ongoing Strategic Planning effort. The focus of YA's Strategic Planning shifted somewhat as the Chief Naturalist position was vacant most of the year. YA underwent a significant reorganization with the selection of Jeff Brown to function, in effect, as an assistant to the Executive Director. Pam Gontz became the field supervisor of the Yellowstone Institute and Debra Thomas assumed the duties of Marketing Director in the book sales component of YA's operations.

The Association's Executive Director participated in Yellowstone's Strategic Planning training and meetings. YA also continued to refine its relationship to the newly established Yellowstone Park Foundation. Broadly speaking, the Yellowstone Association will be focused on supporting interpretation and education functions in Yellowstone National Park while the Foundation will fundraise for a wide range of park needs and projects which may also include those associated with interpretation and education.

MAINTENANCE

The Maintenance Division's workload focussed on the park's major infrastructure problems – roads, utility systems, buildings, and housing. Much of what was accomplished or, in many cases, deferred, was driven by budget concerns which resulted in over 20 status positions being unfilled. Much of the work, outside of the barest of operations, was accomplished with "soft money" funds that could only be used for specific projects. These projects were much needed, but did not, in most cases, help the general day-to-day operations. The lack of a viable, cyclic maintenance program is still increasingly evident, especially in roads. If funding does not increase, the new roads that we are constructing with Federal Lands Highway Program (FLHP) funds cannot be properly maintained. Aside from stabilizing major failures, little or no preventative maintenance is occurring.

The lack of staff has put increasingly stressful burdens on the existing staff, and some things that are getting accomplished are not receiving correct oversight, follow-up, or documentation. There is a tendency to take care of the problem in the short term while the long term problems get worse and worse. One sewage system at Norris has now been shut down for three years, and we are seeing groundwater and surface water being impacted by sewage in the Old Faithful area. Along with the road failures, such as Virginia Cascades, these are indicative of what is coming upon us unless a prioritized program (which will take funding) of repairing the little problems is undertaken before more failures occur.

Yellowstone has made great strides in forming partnerships with other entities, and the Maintenance Division is no exception. The concept that started with the "Greening of Yellowstone" workshop that occurred in 1996 continued in 1997 as the division continued to work with the surrounding states and counties to work to solve problems. This was particularly evident in the air pollution work done with bio-synthetic oils, lubricants, and oxygenated fuel in conjunction with the state of Montana, the Department of Energy, and others with regional recycling and composting projects in southwest Montana. With these types of programs, Yellowstone has been recognized as a leader in pollution prevention and reuse of resources in the Park Service. These types of projects have brought the area and the park together and have resulted in benefits for all involved.

The solid waste program continues to make strides with ongoing partnerships with the cities and counties in southwest Montana. The park is actively participating in the Headwaters Cooperative Recycling Project and is leading the way in the composting study for waste disposal in the area.

Fiscal Operations

The Maintenance Division operated from a number of fund sources as follows:

ONPS	\$7,728,759
ONPS No Year	1,495,000
Repair/Rehab/Cyclic	856,400
Day Labor (404)	106,219
Dept. Of Energy (454)	131,862
FLHP (day labor only)(595)	306,800
School Maintenance (610)	134,000
Housing Initiative (408)	1,273,915
Fee Demo	936,211
Total FTEs for FY97	215
Maintenance FTE Ceiling	218

Road Openings and Closings

The road opening and closing dates were:

April 18	-	West Entrance opened to wheeled vehicles
May 2	-	South and East Entrances opened to wheeled vehicles
May 24	-	Beartooth opened to wheeled vehicles
October 14	-	Beartooth closed to wheeled vehicles
November 3	-	All other roads close to wheeled vehicles
December 17	-	Roads open to snowmobiles.

DISTRICT OPERATIONS

MAMMOTH

The district was short several positions, i.e. Tower Supervisor, Tower EEO-8, Beartooth WL-10, Beartooth EEO-10 (for part of the season), Mammoth MVO-7 (part of the season), Mammoth EEO-10 (part of the season). Consequently, the extra workload was picked up by other area personnel.

Seventy percent of all accountable time was expended performing routine maintenance, such as:

- picking up garbage (cans and dumpsters)
- painting solid refuse containers
- patching potholes

- repairing road regulation signs and visitor information signs
 - grading dirt roads
 - cleaning up rock and mudslides
 - performing campground and picnic maintenance
 - cleaning vault toilets
 - mowing shoulders
 - installing culverts
 - cleaning ditches and culvert heads
 - road striping of Mammoth and district area parking lots/crosswalks/stop bars/No Parking areas/handicap areas
 - removal of hazard trees
-
- Laid 300 yards of MC-800 on the sunken fill area above Africa Lake to bring slump up to grade.
 - Ditched and shouldered five miles of road from North Entrance station to Mammoth. Cleaned and flushed 90% of all culverts.
 - Built double-posted nine rail fence around septic and leach field at the Buffalo Ranch.
 - Rebuilt flood damaged road and shoulders through-out damaged areas in Daisy Pass and Soda Butte Campground vicinity east of Cooke City on US Highway 212.
 - Repaired major flooding and campsite erosion damage to walk in sites at Pebble Creek campground.
 - Repaired major road damage on the lower end of Gardiner high road.
 - Repaired major washout and installed culvert on Stephen's Creek road.
 - Painted vault floors and interior walls - Indian Creek Campground and picnic areas
 - Painted tables and cans in campgrounds and picnic areas
 - Filled in washouts and worked on drainage in Mammoth Campground
 - Installed new Fort Yellowstone exhibits
 - Assisted with construction of new sidewalks for Fort Yellowstone walking tour
 - Repaired fence on tennis courts and installed new windscreens and dividers.
 - Repaired playground equipment and surrounding turf areas
 - Repaired and sodded several areas disturbed by heating and UST work.
 - Assisted in the planting and fencing of cottonwood trees in the Mammoth area.

NORRIS

Quarters

- New gas stove installed, some new wiring, new light fixtures in the kitchen and installed a new water heater in Qtrs #110.
- Installed two new Rinnai heaters to replace obsolete ones that were a safety hazard in Qtrs #112.
- Installed one new Rinnai heater and a new Moen faucet in the bathroom - Qtrs #113.
- Installed seven new windows, electric stove, Moen faucet, and replaced two interior water lines in building #401.
- New boiler flue pipe installed, upgraded from PVC to stainless steel, bldg #486.

Campground

- Felled 40+ hazard trees prior to campground opening.
- Repaired and repainted a number of picnic tables.
- Replaced ten faucets in comfort stations and repaired others.
- Utilized a YCC crew to remove stumps from felled trees, revegetated and rehabbed trails.
- Located, exposed, and staked some valves that had been buried for some time.

Geyser Basin Museum

- Installed 350 feet of new boardwalk allowing handicap access to more of the geyser basin.
- Over 100 new kick logs installed along existing trails.
- Twenty-four new exhibits were installed.
- Cleaned up downed trees along museum.
- Installed new lighting in the museum.
- Painted floors in vault toilets.

Roads

- Stained and straightened all posts.
- Replaced damaged or faded signs.
- Repainted North/South arrows at intersection.
- Patched potholes.

Utilities

Located, dug up, repaired, built new riser and buffalo box and placed a concrete pad around a valve in the government area. This valve, when open, allows water to flow in a loop. This has greatly helped to stabilize residual chlorine in the government area.

Located, built up and installed a manhole cover to the septic tank that takes care of the government area sewage. It had never been located or pumped. Tank size is approximately 1,500 to 2,000 gallons. This tank is too small for existing housing. If any additions are made to Norris, this tank should be replaced.

CANYON

Utilities

- Successful startup and operation of the new wastewater treatment plant.
- Hazard tree removal at the new wastewater treatment plant by fire cache.
- Installation of a rebuilt pump at the Upper Falls lift station.

- Relocation of the radio base station from the visitor center to building 803 by radio shop and Canyon maintenance.
- Installation of water and sewer services for the new campground host site in loop L
- New electrical service to building 821 by the electric shop

Roads

- Extensive pothole patching and grader patching.
- Site work and grading at the new wastewater treatment plant.
- Started rehab work in the Canyon ballfield area.
- Completed the documented sign inventory for Canyon roads and front country trails.

Buildings

- Apartment painting, carpeting, miniblinds installed.
- Implemented a very successful check in/check out procedure for Canyon quarters.
- Significant plumbing repairs.
- Assisted with the construction of the visitor center bison exhibit.

LAKE

Roads

- Sylvan Pass debris and rockslide clearing.
- Cable guardrail repairs from spring opening.
- Finished Fishing Bridge Campground rehabilitation.
- Began installation of new delineators.
- Rebuilt Fishing Bridge walkway from Hamilton Store to RV Park, including installation of new lighting (cooperative projects).
- Assisted with gun base installation on Sylvan Pass.

Marine Projects

- Major repairs to ice damaged docks in Bridge Bay Marina.
- Built two new floating dock sections for Grant boat ramp.
- Installed first new pumpable outhouse at Eagle Bay.

Grounds

- Painted exteriors of vault toilets in area picnic areas.

Utilities

- Conducted area superchlorination upon opening for the season.
- Began major repair on fences around the springs.

- Finished rebuilt rotor installation at Fishing Bridge sewage treatment plant.

General Projects

- Concentrated on housekeeping and safety issues.
- Completely reorganized Fish Hatchery storage.

Building Projects

- Completed the repainting and rehabilitation of Bridge Bay Marina building
- Built new hazard waste/hazard material and compressed gas depot.

GRANT VILLAGE

- Constructed 30' X 48' metal roof over dining/cook trailers.
- Finished rehab of picnic area comfort station to meet ADA accessibility standards. Also added a steeper roof to better facilitate snow removal.
- Installed two new 8' X 20' dock sections for public boat launching.
- Repaired roadway erosion along Lakeshore near Carrington Island.
- Installed new window blinds in eight apartments and three houses.
- Installed new carpet in seven apartments.

OLD FAITHFUL

Roads

- Moved trailer canopies and trailers 50, 51 and 52.
- Prepped and overlaid six-plex parking lot and also installed bumper logs, finished boardwalk to the building.
- Installed, formed and placed cement for the accessible picnic site at Whiskey Flats.
- Installed concrete pad for hazardous waste storage building at Old Faithful.
- Overlaid half of the service road between the Lower Hamilton Store and the west parking area.
- Started to remove old asphalt from the Lonestar Pit.

Utilities

- Sewer line cleaning and video tape of Lodge sewer line.
- Installed a new drain line and valves to the Wastewater Drying Beds.
- Started to remodel the wastewater lab's ceiling, drywall, and paint.
- Die-tested sewer lines in the concessions area of Old Faithful.
- Worked on updating utility maps of the Old Faithful area, water and wastewater, and general utilities.

Housing

- Remodeled the kitchens in building 531 B and C (back doors, floor coverings, counter tops, sinks, and paint.)
- Flooring and carpet in trailer 129.
- Remodeled the bathroom and repaired the flooring and carpeted trailer 130.
- Repaired and carpeted the back bedroom in trailer 30.
- Insulated and skirted trailers 50 and 52.
- Stained trailer posts, skirting, and canopies.
- Installed radon ventilation fans to buildings 490 and 491.

Solid Waste

- Built steps for the 75 yard garbage compactors, winter use.

MADISON

Roads

- Crack sealed the West Entrance road. Accomplished all but 3/10 of a mile. The sealant did not expand with the cracks as they widened this fall; will have to research the problem and come up with a fix.
- Elimination of gravel turnouts on West Road. Placed barrier rocks at three different locations to eliminate traffic pulling off the road at undesignated areas to protect road shoulders and resources.
- Preparation of West four-plex parking area for paving. Hauled in and prepared a base in preparation for paving.
- Patched Norris Road
- Prepared and repainted all of the Madison Campground garbage cans.
- Worked on cleaning up the Mesa Pit maintenance area.

Utilities

- Installed a Muffin Monster solids grinder at the Madison wastewater plant.
- Installed two new recirculation pumps at the wastewater plant.
- Installed six recycled rubber valve box covers on West housing area main water valves.
- Upgraded the two main lift pumps with mechanical seals at the Madison wastewater plant.
- Worked on a variety of items designated by the Sanitary Survey and OSHA inspection.

Buildings

- Resingled the last building of four in West Yellowstone.
- Replace rotten logs on government buildings in West Yellowstone.
- Repaired damaged building corner on garage unit at West.

DISTRICT CRAFT SHOPS

- Finished roof at West.
- Replaced all flushometers on Canyon Rim comfort stations.
- Installed all new interpretative exhibits .
- Constructed enclosed front and rear porches at Canyon.
- Winterized eight-plex at Canyon for winter employees.
- Completed quarters inventory parkwide.
- Instituted park-wide quarters check-in/check-out policy.
- Continued to replace inefficient heat systems with efficient propane units.
- Replaced Lewis Lake generators.
- Repaired collapsed roof at Bechler due to snow damage.
- Installed electric meters in Madison government trailer court.

TRAIL CREW

Three paid NPS crews did project work in their district and also oversaw trail work done by Youth Conservation Corps, National Civilian Community Corps, Student Conservation Association, Aspen Youth Alternatives, Huntoon's Platoon, Montana Conservation Corps, and National Trails Day volunteer and cooperating groups. The trail crew also hosted five individual VIPs on crews.

NPS Trail Crews

- Pebble Creek ; truss foot bridge decked and completed. Old Faithful: replaced rotted Mystic Falls overlook cribbing with rock wall.
- Daly/Black Butte Creeks: thirteen miles of trail maintenance on surrounding trails. Also constructed a 22' turnpike. Several sections of rut and trail elevation.
- Fawn Pass: four miles of trail maintenance, 650 yards of new trail. Twenty-foot stringer bridge.
- High Lake Trail: Six miles of trail maintenance on surrounding trails. Twenty foot decked stringer bridge with rock wall abutments. Diverted spring and constructed 80' causeway to eliminate bog/erosion section.
- Bechler: fourteen miles of trail maintenance on Bechler canyon and river trails. Did quick fix of problem areas on these trails. Did experimental 100' section of "meadow stuffing" to explore solutions for the Bechler Meadow ruts.
- Hellroaring and Coyote Creeks: drainage maintenance on Hellroaring River Trail, Coyote Creek, and Buffalo Plateau trails. Completed 300; reroute with meadow restoration near Hellroaring Bridge, and replaced two rotted bridges near the Hellroaring boundary with muckways, culverts, and causeways.
- Warm Creek Pass: constructed 450' reroute involving two switchbacks and several rock walls.
- Miller Creek: healed the most tortured piece of trail in Yellowstone. Replaced 250 yards of rotted bog bridge, inverted switchbacks, and worked on with 50 yards of straight trail and a 100' turnpike.

- Lamar River and Pelican Cone: removed unnecessary rotted bridge near Cold Creek. Cleaned drains from Cold Creek to Mist Creek Pass, and dug drains on Pelican Cone Trail.
- Mammoth Area: dug drains, built new abutment for Wraith Falls Bridge, constructed water bars and retainer bars on Lava Creek Trail, and hauled gravel for Boiling River Trail.
- Black Canyon of the Yellowstone River: drainage maintenance on Blacktail Creek and Yellowstone River trails. Constructed rock causeways, drains, and retainers to reconstruct unsafe slickrock area near Crevice Creek. Installed handrail on Blacktail Cabin footlog.
- Lake: maintenance on Elephant Back and Delacey Creek trails, and a 400 foot reroute was constructed at Nine Mile Creek trailhead to connect to the new parking area.
- Dogshead Trail: retainer bars, lots of fill, water bars, some crib wall, and several short reroutes. This trail is now almost in a maintainable condition.
- Snake River: maintenance from trailhead through Heart Lake to Snake River Canyon. Significant reconstruction of Snake River Canyon Trail by cutting through mudslides, building causeways, short reroutes, and installing drains and retainer bars from the canyon north to Fox Park.
- Mountain Creek: constructed three separate reroutes, two at 400 yards each, one at 1,500 yards. Performed complete meadow restoration for the long reroute and one of the short ones.
- End of season project: began reconstruction of retaining wall at Boiling River trailhead with 100 square foot sound rock wall; completed installation of removable railing at Brink of the Lower Falls Overlook, built temporary support for Gardiner River Bridge (Lava Creek trail) to hold it for the winter; completed rockwork on Warm Creek Pass reroute and patched washed out rock wall at Tower Falls.

Volunteer/Cooperating Groups

- National Trails Day Volunteers: construction of 2,640 linear feet of new trail from YACC camp to Mammoth.
- National Civilian Community Corps: 400 linear foot reroute, 2,640 linear foot abandoned trail rehab on Grebe Lake trail, 150 square foot crib wall at Artist Point. Repositioned boardwalk at Pelican Creek Nature Trail.
- Youth Conservation Corps: 900 linear foot reroute, 900 linear foot abandoned trail rehab at Artist Paint Pots, 2,500 linear foot reroute, 400 linear foot abandoned trail rehab on Bechler River Trail. Drain installation, tread repair, 110 sq. foot retaining wall on Mt. Washburn Trail, 400 linear foot reroute on Miller Creek Trail. Fifteen foot stock bridge construction, drain installation, tread repair over five miles on Cascade Lake Trail/Observation Peak trail. Intensive tread and drainage work over 1,200 linear feet of eroded trail on Mt. Holmes Trail.
- Huntoon's Platoon: 120 linear foot turnpike, drain installation over 8 miles Specimen Creek Trail.
- Student Conservation Association: 1,200 linear foot reroute, 900 linear foot abandoned trail rehab, drain maintenance over 11 miles on South Boundary trail.

- Aspen Youth Alternatives: 4,000 linear foot abandoned trail rehab at Miller Creek, 3,950 linear foot abandoned trail rehab at Mountain Creek.
- Montana Conservation Corps: Turbid Lake Road restoration project, 1,200 linear feet new tread construction, 25 foot turnpike construction.

ROADS

Norris Hot Mix Plant

The following quantities of asphalt were manufactured and used throughout the park for various road repairs, overlays, and curbing: 2,575 yards of MC-800, 1,665 cubic yards of AC-10, and 465 cubic yards of SC-250.

Hot Mix crews corrected 28 of 29 OSHA deficiencies consisting of machine guarding, catwalk railing, light guards, hot pipe insulating, and general housekeeping tasks. During this process, the plant was shut down voluntarily for approximately three weeks to make repairs. Crews installed 300' of culvert to relieve spring runoff and prevent delayed start up due to flooding of the plant equipment. Crews were involved in storm damage cleanup. Heavy rain created a mudslide (approximately 530 yards) at Gibbon Falls. This crew stabilized erosion in Hayden Valley to prevent road damage through the use of 150 yards of rip rap.

Special Projects Crew

Sixteen miles of the Grand Loop road from Canyon Junction to Fishing Bridge received a chip and seal coat. During the process, the road was closed to the public and administrative travel. Chip retention was improved through fog sealing cover material and enhancing stripe visibility. A total of three miles of this section was overlayed prior to the chip seal to improve ride and drainage. A quarter mile section at Mud Volcano was overlayed and new curbing was installed to delineate vehicular and pedestrian traffic. Existing asphalt was removed from the Mammoth Clinic parking area and glassphalt was used to resurface the parking lot. An employee housing area parking lot was paved in West Yellowstone. Storm damage repairs were made to the following areas: road wash-out at Arnica Creek utility right of way, cleared various log jams at culvert inlets, stabilized erosion along park roads, Soda Butte/Lamar confluence received 840 cubic yards of rip rap, Ice Box Canyon received 170 yards of rip rap, and Gibbon Falls area received 580 cubic yards of rip rap.

One mile of the Turbid Lake road was obliterated and rehabbed. This will be an ongoing project over the next few years. A crew moved 2,000 cubic yards of talus material to establish a safe work environment at the Sylvan Pass avalanche control site.

Special Projects crews performed 350 miles of spring opening duties including a portion of the Beartooth Highway. All roads were open to the public by June 3, 1997 (Canyon to Tower being the last to open).

All Special Projects and Fleet Maintenance employees involved in spring opening activities attended an Avalanche Awareness Course instructed by the Washington Department of Transportation Avalanche Specialist. Snow survey equipment and safety and rescue equipment were purchased for use by these crews during winter operations.

A highway striping contract was awarded to Mark-Rite Lines of Billings, Montana. Roads striped included Golden Gate to Gardiner, Montana; Mammoth to Tower; West Entrance to Madison; Old Faithful to West Thumb to Canyon Village; Lake Hotel Drive and Chittenden Bridge to Artist Point.

FLEET MAINTENANCE

New vehicles and equipment purchased:

-30 snowmobiles	\$ 152,000
-18 light vehicles	456,000
-14 heavy equipment	<u>692,000</u>
	\$1,300,000

Excess Equipment, Light Vehicles and Heavy Equipment Program

Light Vehicles: (sedans, pickups, etc). Yellowstone acquired for the Park Service 13 light vehicles valued at \$80,352.

Heavy Equipment: (two 48 passenger buses, Cat Dozer, John Deere grader) Yellowstone acquired for the Park Service four pieces of heavy equipment valued at \$295,499.

The value figures listed is the actual cost when purchased new. The adjusted value would be substantially less.

Alternative Fuel Project: "Truck In The Park"

- Cooperative effort between several organizations.
- Twenty-seven thousand and two hundred miles were logged on the biodiesel truck utilizing 100% rapeseed oil with ethyl esters. Total mileage is now 79,000.
- Participated in regional demonstration displays.
- In depth reports looking at the pollutants released after combustion are very positive.

Snowmobile/Biosynthetic 2 Cycle Motor Oil Project:

- Cooperative effort between several organizations.
- The first phase of the demonstration project was conducted during the winter of 1995/1996.
- Conoco oil was utilized during this phase.

Initial analysis of our repair records showed that Yellowstone snowmobiles experienced less failure from fouled plugs, burnt pistons/cylinders than in previous years.

Eight snowgroomers have had petroleum-based oil removed from the hydraulics and hydrostatic systems and been replaced with an environmentally safe vegetable oil. This pilot oil will be monitored and evaluated to be used in other park equipment.

BRANCH OF LANDSCAPE ARCHITECTURE

Revegetation

General Seed Collection

Seed was collected for future revegetation projects throughout the park. For major projects, seed is collected at least three years in advance. Ongoing and future projects include Turbid Lake road rehabilitation, Old Faithful Snow Lodge, Canyon, Tower Junction, and Mammoth. Seed was dried, bagged, and sent to Bridger Plant Materials for cleaning and further production as part of the parkwide seedbank process. Cleaned seed was distributed for several small projects in the park.

Mammoth Area Revegetation

Ten-sixteen foot cottonwood trees were planted in the Mammoth historic area and Mammoth school. These trees were started as cuttings taken from the Officer's Row trees in 1989 and grown at a contract nursery in Hamilton, Montana.

Twelve cottonwoods and aspens were planted around sixteen residences in lower Mammoth during the spring and fall. All of these trees were grown at the Stephens Creek nursery.

Turbid Lake Road Reclamation and Revegetation

A staff landscape architect was on site to monitor removal of the old Turbid Lake roadbed. A Montana Conservation Corps crew of fifteen under the supervision of the landscape architect and natural resource vegetation specialist spent one week revegetating a half mile section of the Turbid Lake Road. The work included raking out tracks left by the excavator reclaiming the road. This same crew revegetated the road with hand plants of trees and clumps of grass. A mixture of native forbs and grass seed was spread throughout the project. Mulch was lightly scattered over the revegetated road to trap moisture and protect the seed. This was a joint product with Natural Resource and Trail Crew staff.

Dry Creek Pit and Little Thumb Pit Reclamation and Revegetation (Wyoming Abandoned Mine Lands project)

In August and September a private contractor, monitored by a YNP landscape architect, reclaimed both pits. The old roadbed was removed and more natural contours restored. A Special Projects crew and an Aspen Youth Alternative group from the Montana Conservation Corps, led by the natural resource vegetation specialist with the Branch of Landscape Architecture, revegetated both pits and access roads after the private contractor was finished reclaiming the pits and roads. This was a joint project with the Natural Resource staff.

Sixty pounds of seed were spread over the Little Thumb Pit and access road and twenty-one pounds of seed were spread over the Dry Creek Pit and four mile access road. The crews planted trees, raked tracks, knocked down hummocks of earth and spread mulch over the pits and access roads. A tree spade planted 46 trees at the entrance to the Dry Creek Pit access road and planted 144 trees on the access road and staging area to the Little Thumb Pit.

Fishing Bridge Campground Revegetation

Park crews finished reclaiming the final loops and main road into Fishing Bridge campground. Over fifty trees were spaded throughout the remaining loop and access road into the campground. Tracks were raked out, native seed was spread, and mulch was distributed under new trees and over the seed.

Stephens Creek Nursery

Cuttings and seed were propagated at the Stephens Creek Nursery from road reconstruction projects that will take place in the next three years. Seven-hundred twenty-eight cuttings were taken of which three hundred seventy-eight were successfully rooted and repotted until the project areas are ready for planting. Two hundred and eight pint pots had successful seed germination and will be planted in Canyon, Mammoth, and the new Old Faithful Snow Lodge.

The nursery continues to be used for temporary storage of native plants from all over the park. The current inventory of plants stored at the nursery includes 985 potted forbs, trees, and shrubs, and 449 shrubs and trees that are directly growing in the ground. Over half of all of the plants will be planted on Federal Highway projects on the East Entrance road and the Northeast Entrance road.

Bridger Plant Materials Center continues to grow native plants from seed and/or cuttings taken from within the park. These plants are transferred to our nursery and maintained until ready for planting on various projects.

Sign Program

The Sign Shop released 650 new signs. This includes wood routed, aluminum baked, and ready-made aluminum signs. The switch was made from Dbase to Excel for tracking signs.

New permanent signs were made and installed on the Madison to Biscuit Basin road project. In addition, numerous temporary road construction signs were made.

The computerized wood router produced 50 backcountry boundary signs and 42 other wooden backcountry signs.

Agreements were made with the U. S. Forest Service on how the Nez Perce trail designator would be displayed in the park and where.

Federal Highway Administration Road Projects (FHWA)

Coordination of parkwide Federal Lands Highway Program (FLHP) Budget Requests - Six divisions, thirty people and three interagency agreements were involved in budget requests for participation in sixteen different segments of road projects (overlay, 3R and 4R).

Parkwide Road Project Landscape Coordination - The Chief Branch of Landscape Architecture Eleanor Williams provided parkwide landscape representation on the Road Team with involvement in planning, design, construction, and preparation of overall project coordination. This included involvement on landscape decisions and direction with RMR, DSC, and FHWA personnel. Member of steering committee for roads partnership. Member of Peer Review Committee to evaluate proposals for this region.

FHWA Road Construction

The park provided two landscape architects per construction project. These staff members monitored construction job sites (sometimes 24 hours a day) for resource protection, including thermal areas, wetlands, wildlife, vegetation, viewsheds, and park features. They gave resource orientations to contractors, acted as the liaison between the Federal Highway engineers and the park, ensured that specifications were met and covered many unforeseen project occurrences for road construction projects on the East Entrance road, Northeast Entrance road, and on the Madison to Old Faithful road.

Indian Pond to Lake Butte Overlook, Seg. A (PRA-YELL 13 (2)) - the project landscape architect oversaw topsoil removal and replacement. Concrete simulated stone retaining walls were produced along much of the road edge. Stains were selected (not yet applied) to best match the native stone. Rock masonry was constructed on head walls and around Steamboat Point parking area. Final slope shaping and rock sculpturing occurred under the observation of the YNP landscape architect. Log cribbing retaining walls were built and 75 landscape boulders were strategically placed. Erosion control and erosion repair along the lakeshore were big issues this year due to unusually high water.

Madison to Biscuit Basin, Seg. B (PRA-YELL 10(11)) - Reconstruction of this road segment continued through 1997 (April - November) with the majority of the project being completed. The rock blasting through the Firehole River Canyon area was completed, providing the space necessary to accommodate the new road. Upon removal of the old road surface, the subgrade and drainage features (culverts, perf. Pipes, and geotextile fabric) were constructed/installed on the Grand Loop and Fountain Freight Road

sections. Masons completed the construction of stone-head-and-endwalls on the new culvert pipes. The new designs for the Mary Mountain Trailhead, Firehole River Picnic Area, Nez Perce Picnic area, Ojo Caliente Parking Area, Chief Joseph Interpretive Site, and the various standard turnouts were constructed and prepared for paving.

Three bridges were modified under this project. The Nez Perce Bridge was widened to accommodate the new road dimensions. The old wing walls were dismantled and repositioned, utilizing the existing stone on the new design. A cast of the historic stone masonry on the Nez Perce bridge was created for later use on the new Fountain Freight Road bridge. The design of the Fountain. Freight Road Bridge, while updating the travel width and weight load capacity, utilized the masonry cast to create a simulated-stone veneer, complimenting the historic character of other bridges in the area. The Gibbon River Bridge, the third bridge modified under the contract, received a new sidewalk that meets ADA codes and new wing-walls with natural stone veneer.

To complete the side slopes of the new road, the conserved topsoil was applied, indigenous seed was sown. Landscape logs were strategically placed, and a final cover of mulch was distributed. Salvaged plants, temporarily kept at the Yellowstone National Park Nursery, were returned to the area and planted in appropriate locations.

All traffic control and interpretive signs were installed, except for the area around the Gibbon River Bridge. The mainline and all parking areas received a first and final lift of asphaltic concrete. A centerline stripe was painted, with the final mainline and parking area striping to occur prior to the project completion (July 1, 1998).

Tower Junction to Northeast Entrance (PRA-YELL 12(3)) - successful bidder, Frost Construction (Lovell, Wyoming) was awarded the \$8.1 million dollar contract in Sept. 1997. Construction began and proceeded until the winter shutdown date of November 1. Progress was made on timber removal, topsoil stripping/conservation, and initial excavation was accomplished at the new Warm Creek Trailhead.

Nine truckloads of excess topsoil were taken to Lamar Buffalo Ranch to be used in the revegetation of the Yellowstone Institute cabin area.

In addition, a large amount of aggregate source material was removed from two obstructed drainage channels and stored in several on-site turnout locations. Removal of the remaining excess material and final shaping of the channel will occur in 1998. The contract allows for work to begin on-site as early as March 15 for the 1998 construction season.

FHWA Road Design

Madison to Norris (PRA-YELL 10(10)) - Design work is continuing on this section of road. Redesigned parking areas are being developed for the following areas: Terrace Spring, Tuff Cliff, Gibbon Fall Picnic Area, Gibbon Fall Parking Area, Beryl Spring, Artist Paint Pots, and several standard turnouts along the route. A proposed realignment

of the road section through the Gibbon River Canyon will result in a major new bridge and two new picnic areas. The scheduled bid date for this project is February 1999. Tower Junction to Northeast Entrance (PRA-YELL 12(3)) - Final design work for this project was completed during the summer of 1997. Design included pullouts, parking areas, trailheads, picnic areas and the Northeast Entrance Station. The successful bidder, Frost Construction of Lovell, Wyoming, was awarded the bid in early September 1997.

Grand Loop Road - Arnica Creek (PRA-YELL 10(8)) - Design work for this project was brought out of "mothballs" and again was examined for bid. Work on the project consisted of minor redesign and addition of standard turnouts and culvert pipes.

East Entrance Road - Fishing Bridge (PRA-YELL 13(7)) - Site analysis and inventory work was studied to develop a site plan design which addressed vehicular and pedestrian circulation patterns from Pelican Creek west to the Lake Junction.

A variety of alternatives were explored, including a review of a 1971 alternative which would reroute the mainline road north of the Fishing Bridge area on the east side of the Yellowstone River and eventually cross the river above Le Hardy Rapids with a proposed bridge.

The Fishing Bridge developed area plans have been delayed until completion of the concessions' service plan. The road segments east and west of the Fishing Bridge developed area have been included in the Arnica Creek project, which is scheduled for award in 1998.

FHWA Road Project Seed Collection

A special projects crew of seven people spent five weeks in August and September collecting seed for all road projects ongoing and projects planned up to five years from now. These projects include Fishing Bridge to Lake Butte, Highway 191, Madison to Norris, Tower to Northeast, Tower to Canyon, and Arnica Creek to West Thumb. The seed was dried, bagged, and sent to the Natural Resources Conservation Service, Bridger Plant Materials Center for cleaning and further production as part of the parkwide seed bank process.

FHWA Road Project Revegetation

Three to four people spent three weeks in October on revegetation of the second phase of the Madison to Biscuit road reconstruction project. Two hundred pounds of native seed in four different mixes was spread strategically over roadcuts, picnic areas, ditches, and road shoulders. One hundred plants from the nursery ranging in size from two to ten feet were planted along roadcuts in areas where the plants had been growing.

Madison to Biscuit Basin - One week was spent on revegetation of this project. One hundred salvaged plants and cuttings from the Stephens Creek Nursery were planted in highly visible areas along the finished road. Another two hundred and fourteen small trees were transplanted to areas along the road. Ten pounds of seed was spread in four

areas where minor disturbances had occurred, including thermal basin parking areas, pullouts, and trailheads.

Miscellaneous

Construction monitoring continued on the Yellowstone Institute Project at the Lamar Buffalo Ranch. The new road and parking area were staked and monitored during construction. The old road was obliterated and topsoil spread. Cultural compliance with SHPO was completed for the installation of the solar photovoltaic panels.

Work continued on Park Design Standards. They should go to print in 1998.

The city and county of Livingston, Montana was assisted by Chief, Branch of Landscape Architecture, in their efforts to evaluate the Yellowstone River for flood control measures and revegetation. Staff prepared conceptual designs for access ramps, walkways, and plantings on the construction levee.

Topsoil removal by a contractor was monitored on the new Old Faithful Snow Lodge construction site. Seed and cuttings were collected and put into production.

PARKWIDE BUILDINGS AND UTILITIES

Through a variety of funding sources, (repair/rehab, cyclic, trailer replacement, fee demo, Department of Energy, winter use funds), numerous building and utility projects were accomplished. These projects included:

- South Entrance 254 – completed interior and exterior rehab begun in FY 96.
- East Entrance – completed the second four-plex that was fully occupied by the summer of 1997. Work on the new water system continued and was completed late in the fall.
- Mammoth Campground Restroom – completed a total rehab of one of the four comfort stations in the campground.
- West Entrance Four-plex – contractor completed the building construction. Day labor completed utilities for this unit.
- Mammoth 5B – completed interior rehab.
- Mammoth 394A – completed total rehab to make this unit totally handicap accessible.
- Lamar Generator – ran generator and new battery system. Reduced generator run time to 53%.
- Lamar Utilities - ran water, sewer, and gas for Yellowstone Institute buildings.
- Mammoth Building 27 – west wing and link rehab project started. Building interior gutted. New foundation work constructed. Framing and structural modification in progress.
- Department of Energy Lighting – administration building 36: carpenter, electrical and plumbing shops North District Maintenance Shop, Mammoth Visitor Center, Jail, and Lake Maintenance Shop lights replaced.
- Mammoth 23 – Completed fire sprinkler system
- Tower Four-plex – started the new building and utilities with day labor forces.

- Lake Four-plex – the contractor started the new building. Utilities by day labor in FY98.
- Mammoth Portadorm – constructed a new portadorm in the trailer court.
- Old Faithful Parking Area lighting – upgraded.
- West Entrance Building 499 - Seven car garage – constructed the building.
- Old Faithful Emergency Services Building – completed fire sprinkler system.
- Daly Creek Cabin – total rehab. Replaced rotten logs, door, porch, foundations, chinking, drainage problems.
- Buffalo Lake Cabin – total rehab. Replaced rotten logs, installed wood floor over concrete, installed stove foundation, re-roofed, rechinked.
- Pagoda Steps – installed temporary ramp.
- Mammoth Chapel – replaced furnace, abated asbestos.
- Repaints – various structures parkwide were repainted using cyclic funding.
- Reroofs – contract awarded to reroof both Powerhouse Apartments, no work this year. Last year's contract completed – Madison #419 and trailer court washhouse, West Entrance washhouse.
- ONPS and reimbursable funding sources covered various quarters turnovers and rehabs as well as day to day repairs of malfunctioning equipment, leaks in roofs, utility lines, upgraded electrical services, structural repairs, etc.
- Special events that required support included the bison fence construction and operation at Stephen" Creek and the 125th celebration at Mammoth and Old Faithful.
- Boardwalk Replacement projects included completing the main Old Faithful geyser viewing deck using the plastic lumber donated by Lever Brothers, replacement of the walk from Grand Geyser to the Firehole River pedestrian bridge using the donated plastic decking, boardwalking the remainder of the asphalt trail from Sawmill to Lion Geyser area on Geyser Hill, adding a connecting piece at the Porcelain Basin at Norris near Whale's Mouth, and moving a section near Daisy Geyser at Old Faithful to get out of the geyser spray.

PUBLIC AFFAIRS OFFICE

Personnel

The Public Affairs Office staff included Marsha Karle, Chief of Public Affairs (GS-12, PFT), Cheryl Matthews, Assistant Chief of Public Affairs (GS-11, PFT), and Stacy Churchwell, Administrative Assistant (GS-07, PFT). Beth Kaeding was hired on a detail in January as the 125th Anniversary Coordinator to assist with the planning and organization of events and to issue news releases commemorating the park's history and the anniversary year. Terry Eddington volunteered in January through March, providing general clerical assistance. Kerry McCartney arrived in May 1997, completing her internship for the University of Wyoming in Laramie in August 1997. Kerrie assisted with general office duties, the 125th anniversary events, and completed a 140-page document titled "Ten Years After: The Yellowstone Fires of 1988" to be used as an internal reference.

Budget

The ONPS base for Public Affairs was \$171,600 with an additional \$56,000 authorized for Beth Kaeding's salary.

Anniversary expenses totaled over \$211,000; of this amount, \$67,500 was paid from the Public Affairs ONPS account and \$10,000 was paid from the Public Affairs Yellowstone Association donation account. The additional anniversary expenses, totaling over \$133,500, were paid for by other divisions. This amount included an estimated \$31,000 for the 1997 Biennial Scientific Conference.

The Public Affairs Office collected \$61,668 in film permit application and monitoring fees (\$25,800 was collected in FY96). This money was used to pay the salaries of park staff who assisted with filming and photography projects in the park.

General Information Services

The Public Affairs Office serves as a clearinghouse of information for the park and the public as well as for local, national and international organizations, and congressional offices, and responds daily to written, telephone, and walk-in requests for assistance and information.

In addition to responses to a variety of information requests, the Public Affairs Office responded to 30 Freedom of Information requests.

The Public Affairs Office worked closely with the Regional and Washington Public Affairs Offices keeping them informed on a variety of matters. Major news items involving Yellowstone included the 125th Anniversary celebration and events; visits by Vice

President Gore and General Schwarzkopf, bison/brucellosis and adjustments made in December to the *Interim Bison Management Plan*; Judge Lovell's decision and orders to draft a contingency plan to close park roads during extreme weather conditions, artificially feed bison, and limit the number of bison that can be killed to 100 until another hearing is held; the winter use *Environmental Assessment (EA) – Temporary Closure of a Winter Road* (released for public comment in November) and the public attitude toward the proposed alternatives; wolf restoration and Judge Downes' ruling that all reintroduced wolves be removed from Yellowstone and central Idaho; the Fee Demonstration Program and the effects it has had on the park (i.e., public attitude, any changes in visitation, and any benefits the park has seen); the fire management plan, fire recovery and plans for ten years after the fires of 1988; microbes and the agreement with Diversa; Yellowstone's Northern Range; construction of the new Old Faithful Snow Lodge; Lake Trout; budget; and the New World Mine.

News Releases

155 press releases were issued including 22 emergency news call-outs, 3 media advisories, and 54 press releases commemorating Yellowstone's 125th anniversary.

Photo/Slide Request

The Public Affairs Office answered 120 requests for the loan of slides and photographs on Yellowstone subjects. These requests came from the general public, production and publishing companies, educational institutions, and the media.

The Public Affairs Office continues to do the film processing for other divisions in the park, and approximately 570 orders were processed.

Publication Editing Requests

The Public Affairs Office responded to more than 350 written and phone requests for editing publications about Yellowstone. These requests, often times, required extensive research in order to provide accurate information for major national and international publications.

Filming Permits

A total of \$61,668.01 was collected in application and monitoring fees.

The Public Affairs Office received approximately 250 requests from production companies and freelancers for permits to film such things as nature documentaries and product commercials. Of those requests, 73 resulted in the issuance of a filming permit. Time was spent with each of these companies arranging interviews and monitors when necessary, doing research, fact-checking scripts, scouting locations, doing on-site monitoring, processing appropriate billing statements, and tracking application and monitoring fees.

Even in cases where a filming permit was not issued, time was spent on each request explaining park policy, filming procedures, guidelines, and fees.

The JASON Foundation for Education submitted a proposal to film a live, interactive, educational science program in the park for "Journey from the Center of the Earth". They began scouting, interviewing park staff, and filming the initial stages of their program throughout 1996. Cheryl and Marsha were involved with planning including arranging interviews with park staff, assisting in organizing the curriculum for the program, and conducting location scouts, conference calls and meetings with the JASON Project and other production companies involved in producing the program.

Media Contacts

The Public Affairs Office responded daily to requests for information and interviews from local, regional, national, and international news media on various, often controversial, issues such as bison management, visitor use management, fee increases, and budget. The Public Affairs Office conducted interviews with approximately 100 television stations, 35 radio stations, and over 100 print media on an on-going basis throughout the year. Additionally, interviews with foreign news media were conducted with approximately 20 television stations, 4 radio stations, and 10 print media.

Congressional/Official and Other Visitors

Throughout the year the Public Affairs Office assisted with programming and arrangements for United States government dignitaries, park officials, and other guests. These visitors included:

- January - Louis Andres, Park Manager, Malabar Farm State Park, Lucas, Ohio - met with Marsha Karle regarding general park management and policy, and park issues.
- March - Michael Dunn, Assistant Secretary, USDA - visited the bison capture facility at Reese Creek and did a fly-over of the park.
- March - Dan Glickman, Secretary, USDA - visited the Eagle Creek area and the bison capture facility at Reese Creek and did a fly-over of the park.
- June - General Schwartzkopf - did a piece for NBC Nightly News on Grizzly Bears. The Public Affairs Office arranged a media opportunity at Mt. Washburn during his visit.
- July - Garrison Keillor performed a live broadcast *A Prairie Home Companion at Yellowstone* to honor the park's 125th anniversary.
- August - Dale Butland, State Director for Senator Glen of Connecticut - visited the park with his family.

- August - Congressional Staffers for Congressman Talent of Missouri and Congressman Baner of Ohio - toured the park with NPS staff.
- August - Vice President Gore, Secretary Bruce Babbitt, Director Robert Stanton, and Montana Senator Max Baucus - honored the "Protectors of Yellowstone" at the August 17th anniversary event.
- August - Governor Jim Geringer of Wyoming, Governor Phil Batt of Idaho, Senators Craig Thomas and Mike Enzi of Wyoming, Representative Barbara Cubin of Wyoming, and NPS Intermountain Regional Director John Cook - spoke in honor of the National Park Service's birthday on August 25 at Old Faithful.
- September - Bill McIlhenny, United States UNESCO Observer - visited the park on a personal trip.

Official Visitors/Countries

The Public Affairs Office assisted with visits by many foreign dignitaries and organizations including interns, government officials, and park managers. Fifty-four organizations were represented from 36 different countries including Albania, Australia, Austria, Bhutan, Bolivia, Brazil, Canada, Czech Republic, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, France, Germany, Guatemala, Honduras, India, Indonesia, Israel, Japan, Kenya, Liberia, Malaysia, Mongolia, Nepal, Nicaragua, Paraguay, Philippines, Slovak Republic, Tanzania, Thailand, Uruguay, Venezuela, and Vietnam.

Shadrack Kamenya of Tanzania was in the park from May 19 through June 13 to complete a portion of an internship. Shadrack was selected by Dr. Jane Goodall to serve as Director of Research at Gombe National Park, and in preparation, suggested that Shadrack visit Yellowstone to seek experience with complex park issues, management, and operations requirements.

Meetings/Special Events

❖ 125th Anniversary Events/Meetings:

Yellowstone celebrated its 125th anniversary during the year with a number of events and publications. Extensive work and time went into planning and carrying out the events and special projects to commemorate the park's 125th anniversary. Public affairs staff began discussing ideas and plans for the 125th anniversary year in November of 1995. To assist with the anniversary year, the Public Affairs Office hired Beth Kaeding to coordinate, organize, and oversee the year's events and activities. Below are the actual events that took place during the course of the anniversary year:

The birthday of Yellowstone was honored on March 1 with a ceremony in the Mammoth Post Office. The National Park Service served birthday cake and coffee, the Superintendent and Assistant Superintendent greeted visitors and made a few remarks, and the U.S. Postal Service (USPS) issued a special commemorative cancellation for postage on that day. With the assistance of the USPS, the Public Affairs Office developed the commemorative cancellation for the stamp.

In conjunction with March for Parks, Yellowstone worked with the Greater Yellowstone Coalition and the community of Livingston, Montana, to celebrate Yellowstone's 125 years with a march through town. This took place in April. A number of interpretive stations were set up for the marchers to visit. The money raised went toward a fund to develop new exhibits for the Madison Museum.

In early July, Garrison Keillor brought his radio show, *A Prairie Home Companion*, to Old Faithful. Great interest by the public necessitated a lottery drawing for the limited number of tickets. A system for tracking over 1,700 entries and selecting winners for the 300 available tickets was developed (over 2,400 entries were actually received, but duplicate entries were removed).

On August 1, a new bison exhibit for the Canyon Visitor Center was unveiled for the public. The exhibit was made possible through a partnership with the Buffalo Bill Historical Center in Cody, Wyoming. A pre-opening cocktail party was held for donors, dignitaries, and production staff on July 31.

Two main celebratory events were held in August. The first on August 17 was held in Mammoth and Vice-president Al Gore attended. Also attending were NPS Director Robert Stanton; Secretary of the Interior Bruce Babbitt; and Montana Senator Max Baucus. The ceremony honored "Protectors of Yellowstone," which evolved from the idea that the military--who protected Yellowstone for 30 years until the National Park Service was established--should be honored. (The 1st Cavalry rode into Mammoth on this date in 1886.) The I Corps Army Band and color guard from Fort Lewis, Washington, participated in the ceremony along with their Commanding General as did a contingent of mounted Yellowstone rangers. Among the "Protectors" honored were the Yellowstone Association, Conoco Inc., the Department of Energy, Lever Brothers Company, and the Greater Yellowstone Coalition. These and others were honored for their contributions to Yellowstone. Following the ceremony was a dedication of the newly installed self-guided tour of Fort Yellowstone. A BBQ luncheon for the dignitaries and invited guests followed the dedication. A media center was established for this event for credentialing and to provide information, NPS contacts, and a work center for media to file stories. A press conference was held at the media center to sign an agreement that was reached on the nation's first "bioprospecting" arrangement with Diversa Corporation.

The second celebration was held on August 25 (the birthday of the National Park Service) at Old Faithful. Governor Jim Geringer of Wyoming, Governor Phil Batt of Idaho, Senators Craig Thomas and Mike Enzi and Representative Barbara Cubin of Wyoming

attended. Regional Director John Cook officially represented the NPS. The 67th Army Band of the Wyoming National Guard from Cheyenne provided the appropriate music. Theodore Roosevelt (portrayed by Mark Klemetsrud) appeared, and there was a Native American blessing and an address by Dr. Susan Rhoades Neel of Montana State University. Following the ceremony, there was a BBQ luncheon for invited guests. The Shoshone-Bannock tribe performed demonstration dances for the public.

In addition to the events held to honor the park's 125th anniversary, publications and memorabilia were also developed: a special park newspaper supplement was prepared for the 125th anniversary and given to all park visitors at the entrance gates. A special book, A Yellowstone Album, containing many historic photographs was produced and published by the park staff in tribute to the anniversary year. A poster of the park's 1996 Art for the Parks purchase was produced for sale. Weekly press releases about Yellowstone and its history and resources were prepared and sent to regional news organizations, interested parties, and all park staff. A logo was designed and logo pins were made and given to each park staff to wear during the anniversary year.

PLANNING AND COMPLIANCE

Planning and compliance office staff worked on projects in seven major categories: Winter Visitor Use Management, Road Improvement, Transportation Planning, Housing Planning, Greening, Commercial Service Planning, and Accessibility.

Winter Visitor Use Management and Winter Use Planning

In December 1996, the 20-person Winter Visitor Use Management Team held a two-week meeting to draft a preliminary report that was presented to representatives of the Greater Yellowstone Coordinating Committee. The committee directed the team to complete its preliminary report and make it available for public review. In April 1997 the Interagency Winter Visitor Use Management team published *Winter Visitor Use Management: A Multi-Agency Assessment*. The preliminary report was on public review from June through September. A total of 1,215 letters were received during the comment period.

In May 1997, the Fund for Animals and other groups and individuals filed suit in Federal District Court in Washington D.C. over winter use in Yellowstone and Grand Teton National Parks. The court approved a settlement agreement in October that committed the National park Service to two primary actions: evaluating a temporary closure of a winter road in Yellowstone and preparation of a new winter use plan for both parks.

In November of 1997, *Environmental Assessment - Temporary Closure of a Winter Road, Yellowstone National Park* was completed. During the 45-day public comment period, a total of 2,742 letters were received.

Preliminary planning for a new winter use plan for Yellowstone and Grand Teton National Parks and the Rockefeller Parkway began in 1997. In accordance with the settlement agreement, public scoping for the planning effort is scheduled to begin in April of 1998. In addition to soliciting input from the general public, the planning process will include several cooperating agencies, including the states of Wyoming, Montana, and Idaho, local county governments, and the Forest Service.

Information needs for the winter use plan have been identified, and a social science project was underway in 1997. That study developed a computer model of oversnow vehicle traffic in the park and began evaluating indicators of social carrying capacity. A successful grant was received from the Pew Charitable Trusts to help support winter air quality monitoring.

Road Reconstruction

The National Park Service, in partnership with the Federal Highway Administration, is involved in a major reconstruction program for Yellowstone National Park roads. During 1997, planning activities occurred on six different road segments.

On the **East Entrance Road**, most planning work focused on design of the Fishing Bridge Junction to Indian Pond segment (for contract award in 1998). On the west side of the park, construction on the second phase of the **Madison-to-Biscuit Basin Road project** continued.

Moving north from Madison Junction, potential width and alignment alternatives were evaluated for inclusion in an environmental assessment for the **Madison-to-Norris Road project**. A draft traffic study of this road segment (and others in the park) was completed in May. That assessment is due for public review in 1998 with a contract to be awarded in 1999.

Resource data collection continued in 1997 for the **Norris-to-Mammoth Road** segment. Surveys to identify archeological resources were underway.

An environmental assessment for the **Northeast Entrance Road** was released, comments were received, and a Finding of No Significant Impact was signed. This 3-R project was awarded in September.

Along the shores of Yellowstone Lake between Lake and West Thumb, a three-mile segment of road remains to be reconstructed in the vicinity of Arnica Creek. Planning and design for the **Arnica Creek-to-West Thumb Road** project also continued. An environmental assessment will be completed in 1998 with construction planned to begin late that year.

Resource data collection for the **Dunraven Road** continued as did completion of a transportation study (see below). This 3-R project is scheduled for award in 2000.

Transportation Planning

A corridor study of the Dunraven Road from Tower Junction to Canyon Village was completed entitled "Transportation Study Dunraven Road". The study evaluated a variety of visitor transportation alternatives for the Dunraven Pass road. The evaluation considered the visitor experiences, resource protection, and operation concerns for this portion of the park roads.

Commercial Service Planning

Preparation of a Commercial Service Plan and environmental impact statement continued.

Housing

The Draft Mammoth Housing Development Plan and Environmental Assessment was released for public review with a 60-day comment period. This plan addresses the needs of NPS, concessioner, and cooperator employees for housing in the Mammoth Hot Springs and North Entrance areas. NPS personnel are working in conjunction with planners and landscape architects from the consulting firms of The Roybal Corporation and DHM, Inc. to complete the plan.

Greening

Planning Office staff began to work on a second "Greening of Yellowstone" workshop that will be part of Yellowstone National Park's 125th Anniversary Symposium to be held in May 1998. The 1998 Greening workshop will follow-up on a greening workshop held in October 1996 in West Yellowstone, Montana. The 1998 workshop will report on progress and new initiatives for sustainability in the park and region in five areas: Building Materials and Design, Alternative Fuels, Alternative Transportation, Energy, and Waste Management.

Other projects and staff changes

Projects such as **Fishing Bridge Campsite Replacement** and the **Backcountry Management Plan** remained on hold throughout the year. Staff helped coordinate placement of a new weather station in the Lake vicinity and participated on the "Science/Research System and Research Collecting Permits" resource team. The project tracking/status system was used to process a number of small projects (all deemed categorically excluded from further NEPA compliance).

Leigh Anne Dunworth was hired as a temporary, Outdoor Recreation Planner to be project manager for the Mammoth Housing Plan. Lori Compas was hired under a temporary appointment to assist in the content analysis for the winter visitor use management process. Melissa McAdam joined the Planning Office on a one-half time detail to assist with the Commercial Services Planning. Jim Evanoff assisted the Planning Office with the "Greening of Yellowstone" workshop on a part-time detail. Kristin Legg was hired on a temporary appointment at year's end to assist with winter visitor use management.

Interim Access Plan

An Interim Accessibility Improvement Plan was completed, and Yellowstone National Park is committed to continue making improvements to provide access to facilities and programs for all visitors and employees who have a disability. Accessibility inventories of all public building and programs were completed in 1996 using the Government-wide computerized program, Accessibility Data Management System (ADMS). The park is setting priorities for providing accessible facilities and programs.

In September, two volunteer groups assisted in the completion of an accessible trail project connecting the Fishing Bridge RV Park with the Museum, store, and gas station at Fishing Bridge. Numerous mall accessible projects (such as curb cuts, restrooms and parking access) were completed. The Planning Office responded to inquiries and requests regarding accessible facilities and programs in the park.

Slough Creek Campground Campsite Relocation

With the heavy snowmelt runoff of 1996 and 1997, several campsites along Slough Creek have become safety and sanitation hazards. A proposal to relocate these campsites was presented to Resource Council, and upon further discussion, it was decided that the project be upgraded to an environmental assessment due to the popularity and unique camping experience that Slough Creek campground provides. Public scoping of issues and alternatives occurred during the fall of 1997. A draft environmental assessment will be released for public comment for the summer of 1998 with a final environmental assessment and decision expected by the spring of 1999.

RESOURCES MANAGEMENT OPERATIONS & VISITOR PROTECTION

Chief Ranger Dan R. Sholly
 Assistant Chief Ranger Michael B. Murray

<u>Budget</u>	<u>FY 96</u>	<u>FY 97</u>
ONPS	\$4,584,000	\$4,727,000
Fee Collection	557,000	650,000
Fishing Fees	350,000	325,000
Fee Demo	-0-	300,000
Total	\$5,491,000	\$6,002,000

<u>Personnel</u>	<u>FY 96</u>	<u>FY 97</u>
# Permanent employees	87	92
# Seasonal employees	163	156
# YCC enrollees	30	30
Total # employees	280	278

Retirements

Jim Sweaney - North District Resource Management Coordinator

Resignations

Linden Schlenker - from Communications Technician
 Peter Schmidt - from Communications Technician
 Tom Totland - from Communications Technician

Transfers Out of RMO&VP

Mike Murray - from Assistant Chief Ranger to Assistant Superintendent, Cape Cod NS
 Betsy Mitchell - from VSO Clerk to Secretary, Chief of Interpretation (YNP)
 Craig Patterson - from Park Ranger, Old Faithful to Park Ranger, Grand Canyon NP
 Nate Benson - from Prescribed Fire Support Module Leader (PFSM) to PFSM Leader,
 Great Smokey NP

Transfers Within/To to RMO&VP

Tara Ross - from Park Ranger, Grant Village to Assistant Sub-District Ranger, Grant Village
 Chris Hansen - from Criminal Investigator, Old Faithful to Criminal Investigator, Law Enforcement Office, CRO
 Judi Mihan - from Procurement Office to North District Clerk
 Lane Baker - from Park Ranger, Everglades NP to Assistant Sub-District Ranger, Mammoth
 Lloyd Kortge - from Assistant Sub-District Ranger, Mammoth to Sub-District Ranger, Lake
 Alice Siebecker - from Sub-District Ranger, Lake to Assistant Sub-District Ranger, Lake
 Keith McAuliffe - from Park Ranger, Grand Canyon NP to Park Ranger, Lake
 Mike Ross - from Backcountry Ranger, Snake River to Backcountry Ranger, Lamar
 Michael Keator - from Assistant Sub-District Ranger, Tower to Sub-District Ranger, Madison
 Morris Bray - from Park Ranger, Old Faithful to Assistant Sub-District Ranger, Tower
 Wes Miles - from Park Ranger, Lake to Park Ranger, Norris
 Jesse Farias - from Park Ranger, Grand Canyon NP to Sub-District Ranger, East Entrance
 Pete Webster - from Park Ranger, Wrangell-St. Elias NP to Park Ranger, Old Faithful
 David Tyroler - from Park Ranger, Jefferson National Expansion Memorial to Park Ranger, Old Faithful

New Hires (from term appointments)

Dave Kreutzer - Lead Forestry Technician, Fire Cache
 Julia Jawad - Supervisory Visitor Use Assistant, East Entrance
 Art Jawad - Assistant Sub-District Ranger, East Entrance
 Jeff Herriford - Park Ranger, Mammoth
 Kathleen O'Leary - Supervisory Visitor Use Assistant, South Entrance
 Rich Hatfield - Visitor Use Assistant, North Entrance
 Lynne Mager - Visitor Use Assistant, Backcountry Office

Park Visitation

Visitation by Entrance Station	<u>1995</u>	<u>1996</u>	<u>1997</u>
West	1,090,477	1,119,802	1,057,686
South	868,845	814,300	813,171
North	599,611	587,661	548,507
East	356,857	316,449	278,244
Northeast	227,866	191,541	205,749
SUB-TOTAL	3,143,655	3,030,473	2,903,357
U.S. Highway 191	958,252	936,341	951,904
TOTAL	4,101,907	3,966,814	3,855,261

Fee Collection (FY97)

<u>Entrance Stations</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
West	\$1,656,344	\$1,487,648	\$2,702,684
South	174,323	117,889	122,297
North	740,109	702,758	1,262,484
East	787,160	727,972	1,278,964
Northeast	362,885	336,539	892,937
SUB-TOTAL	\$3,720,821	\$3,372,806	\$6,259,366

Other Fees

Campground fees collected	\$404,918	\$285,319	\$467,768
Boating SUP fees collected	32,360	30,330	29,655
Fishing SUP fees collected	433,274	662,749	695,300
Total Fees Collected	\$4,797,854	\$4,571,654	\$7,452,089

In 1996, Yellowstone and Grand Teton National Parks were two of 100 NPS units selected to participate in the Congressionally-authorized Recreation Fee Demonstration Program. In the 1996 Appropriation Bill (Section 315), Congress mandated the Secretary of the Interior to implement a pilot fee program to demonstrate the feasibility of user-generated cost recovery for the operation and maintenance of recreation sites on federal lands. Entrance fees were increased from \$10 to \$20/vehicle on December 20, 1996 (snowmobile fees increased from \$4/person to \$15/snowmobile). Prior to that, entrance fees for Grand Teton and Yellowstone were last increased in the spring of 1988 - from \$5 to \$10/private, noncommercial vehicle.

The additional funds generated by the fee increases will be used to accomplish projects the parks have been unable to fund through yearly congressional allocations. Funded projects will increase the quality of the visitor experience and enhance the protection of park resources. Some of the projects funded this year include road improvements, enhanced accessibility to park buildings and resources, and campground and amphitheater upgrades. Very few complaints concerning the fee increase were received, and most visitors are very supportive as long as additional fees are retained in the park to help protect the park and its facilities.

Visitor Services Office (VSO)

<u>Permits Issued</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Golden Eagle Passports	13,126	11,199	13,250
Golden Age Passports	13,799	12,202	15,012

Golden Access Passports	800	750	700
Annual Park Passes	17,190	15,848	7,356
Boat Permits: motorized	1,204	1,292	1,262
Non-motorized	1,917	2,211	2,284
Fishing Permits	75,071	71,225	67,700
Other Special Use Permits	180	175	235
Park Supplier Permits	825	682	758
Employee Vehicle Permits	3,900	3,900	3,900
Fee Waivers	340	300	324
Incidental Business Permits	132	131	129

<u>Lost and Found</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Found Items	3,612	3,177	3,451
Lost Items Reported	1,950	2,033	2,100
Items Returned to Owner	851	650	762
Items Returned to Finder	284	260	395

<u>Visitor Information (VSO)</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Information Calls	25,640	23,918	22,359
Code-a-phone responses mailed	6,114	7,990	5,538

The Visitor Services Office staff inventoried and distributed 35 different park publications such as maps, newspapers, bison and bear warnings, backcountry brochures, and boating permits to all 11 campgrounds, 5 entrance stations, and 7 visitor centers. Over 30 tons of brochures, maps, and newspapers were delivered by office staff through the course of the summer. The office supervisor, with the help of the Communications Center and Interpretive staff, coordinated and produced park informational mail-out packages.

<u>Communications Center</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Identification Notices	201	181	135
Number Located	31	40	19
Percent Located	15.4%	22%	14%
Criminal History Checks*	1,293	1,607	1,727
*No. Individuals Run	509	557	563
Other Law Enf. Checks	59,802	118,861	63,372
Vehicle Checks	11,499	8,961	11,108
Persons	9,166	19,588	8,557
Locals	17,287	24,733	18,745
NCIC Inquiries	21,850	65,579	24,619
NCIC Entries	4	4	14
APBs	36	26	27

ATLs	28	33	20
Wrecker Requests	193	206	289
Incoming Calls	234,202	195,191	153,619
Calls taken by *CINDI	165,398	126,530	119,554
%of calls taken by *CINDI	60.8%	65%	77.9%
Information Packets Mailed	28,076	20,300	18,327
Regular	26,363	18,412	17,212
Foreign	1,713	1,888	1,115

Visitor Protection

<u>Employee Certifications</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Criminal Investigators	4	4	4
Permanent Commissioned Rangers	53	48	53
Seasonal Commissioned Rangers	66	71	69
Deputy USF&W Agents	29	0	0
County Deputy Sheriff	40	41	41
Deputy U.S. Marshal	1	2	2
SCUBA Certified	3	5	4
Firearms Rangemaster	20	20	30

<u>Law Enforcement</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Case Incident Reports	5,165	6,308	6,031
Motor Vehicle Accidents	594	591	549
Part I Offenses	137	110	181
Part II Offenses	6,502	8,527	7,892
Car Clouts	26	39	36
Verbal Warnings	21,282	20,898	19,780
Violation Notices Issued	3,216	4,032	3,839
Arrests	89	102	90
Court Cases (heard in Yell)	218	238	245

<u>Resource Protection</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
* = # Violation notices issued			
* Preservation of nat. resources	64	66	37
* Snowmachine	113	85	144
* Camping	159	244	256
* Closed area	363	167	177
Verbal warnings for firearms	725	875	675
* Firearms	35	41	44
* Wildlife/Hunting	11	11	20
Fishermen Contacts	10,280	8,311	6,799

* Fishing	96	84	106
* Swimming/Bathing	79	56	15

Fatalities (name, date, & type of incident)

1. Hutchinson, Roderick A., 3/5/97, Avalanche, Heart Lake
2. Dustman, Diane, 3/5/97, Avalanche, Heart Lake
3. Johnson, Joe Wm., 5/12/97, Heart Attack, O.F. Hamilton Store
4. Devine, Steven Allen, 6/12/97, Boating Accident, Rock Point
5. Devine, Michael Dennis, 6/12/97, Boating Accident, Rock Point
6. Kinney, Curtis Wade, 6/28/97, Heart Attack, Lake
7. Benko, Robert, 7/27/97, Heart Attack, Grant Village Lodge
8. Pyles, Cynthia Ann, 7/27/97, Asphyxiation, O.F. Lupine Dorm
9. Taylor, Brenda, 8/1/97, Motorcycle Accident, Sheepeater Cliff
10. Perkins, Rory Lee, 8/5/97, Snowmobile Accident, Mamm. Garage
11. Reimann, Norma Jean, 8/11/97, Homicide/Suicide, Frog Rock
12. Reimann, Ronald Robert, 8/11/97, Homicide/Suicide, Frog Rock
13. Spurlock, Terry Lynn, 8/15/97, Blood Clot, u/k
14. Craig, Donald Rude, 9/21/97, Cardiac Arrest, O.F. Ham Store
15. Karho, James, 12/31/97, Suicide, U.S. 191

<u>Structural Fire</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Alarms	224	257	215
Fires	15	11	7
Extrication	4	2	10
Hazardous Materials	3	3	2
TOTAL	246	273	234

The Mammoth Fire Department purchased a new Quantum Fire Apparatus from Pierce Manufacturing, and it was delivered in mid-April 1998. We purchased confined space rescue equipment to be better equipped for employee and victim safety. We assisted gateway communities on several major motor vehicle accidents performing extrication and life support, assisting with two major structural fires, and providing firefighter proficiency training.

Structural Fire personnel also assisted in the park's 125th celebration by providing a command system for Vice President Al Gore's visit.

Wildland Fire Operations

The 1997 wildland fire season was one of the mildest and slowest on record. A total of 13 fires were reported; 11 were declared prescribed natural fires, and 2 were declared wildfires and suppressed. These 13 fires burned approximately 1 acre. The mild fire

season was due, in large part, to the record snowpack, winter rains, and above average summer rains. The winter of 1996-97 saw a record amount of snowfall in Yellowstone accompanied by an unusual rainfall event around the New Year where over two inches of rain fell from Old Faithful to the South Entrance. South Entrance and Old Faithful both recorded 19 inches of precipitation during the period of November-January. The yearly precipitation totals ranged from 109% (17 inches) at Mammoth to 159% (52 inches) at the South Entrance. Summer rainfall totals were above average, especially in July, where all park stations recorded over 200% of normal rainfall.

The mild fire season was not limited to just Yellowstone; the fire season was slow across the entire west all summer long. Yellowstone had 39 support actions dispatching 147 personnel to fires in 1996 and only two support actions dispatching 7 personnel to fires in 1997. The Prescribed Fire Module stationed in Yellowstone had the most activity in prescribed fire activity. They were dispatched to 18 support actions in various parks from Florida to California. Yellowstone had one firefighter assigned to a Type I Incident Management Team during 1997, and that person had no dispatches.

The park continued to be very active in fire management training; approximately 250 personnel attended wildland fire training courses. These courses included Basic Firefighter (S-130/S-190), Chainsaws (S-212), Helicopter Training (S-217), Intermediate Fire Behavior (S-290/S-390), Fire Business Management (S-260), and the refresher course, Standards for Survival. Fire management personnel assisted in instructing courses in the South-Central Zone and at the Northern Training Center in Missoula, Montana.

Air Operations

1997 was the first year of a new three-year contract with Geo-Seis Helicopters of Ft. Collins, Colorado. The contract helicopter was an Aerospatiale 315b "Lama". The flight rate was \$1,141/flight hour with a 200-hour guarantee for a contract period of 108 days (June 15 to September 30). A total of 200.8 hours were flown, a relatively slow year due to the slow fire season. The majority of hours were flown in support of search and rescue and backcountry projects such as rebuilding backcountry cabins at Daly Creek and Buffalo Lake. Short-haul training continued with 15 park personnel certified for this type of operation. There were 40 park-related air medical flights flown in 1997, up from 38 flown in 1996.

<u>Annual SAR Statistics</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
# of SAR Incidents	44	9	37
# of staff hours on SARs	1,478	825	3,159.5
Personnel Costs	\$33,804	\$14,025	\$94,582.97
# of Flight Hours on SARs	14.9	15.9	54.9
Flight Costs	\$16,314	\$15,554	\$52,526.73
Total SAR Expenditures	\$50,118	\$19,579	\$147,109.70

Annual SAR ReportIncident Summary

<u>Type</u>	<u>Incidents</u>	<u>Inj/Ill</u>	<u>Fatals</u>	<u>Non-Inj</u>
Hiking	17	8	0	9
Skiing	3	0	2	5
Climbing	1	1	0	5
Boating	4	2	0	2
Swimming	0	0	0	0
Scuba	0	0	0	0
Vehicle	3	6	0	0
Aircraft	0	0	0	0
Stock	3	2	0	1
Mutual Aid	6	4	0	2
Unfounded	0	0	0	0
Other	0	0	0	0
TOTAL	37	23	2	19
Saves	3	3		

Cost Summary

NPS Programmed	Hours: 1827	Costs: \$36,112.50
NPS Unprogrammed	Hours: 1332.5	Costs: \$58,470.47
Non NPS	Hours: 0	Costs: 0.00
TOTAL	Hours: 3159.5	Costs: \$94,582.97

Military F/Wing	Hours: 0	Costs: 0.00
Military Rotary	Hours: 0	Costs: 0.00
NON Military F/Wing	Hours: 0	Costs: 0.00
Non Military Rotary	Hours: 54.9	Costs: \$52,526.73
TOTAL	Hours: 54.9	Costs: \$52,526.73

<u>Emergency Medical Services (EMS)</u>	<u>1997</u>	<u>1996</u>	<u>1995</u>
Total EMS Incidents	759	793	696
Basic Life Support Incidents	544	609	594
Advanced Life Support Incidents	215	153	128
Ambulance Transports	269	267	263
Air Ambulance Transports	40	39	55

West Park Hospital of Cody, Wyoming, the park medical services concessioner, provided oversight to the park EMS program. In 1997, the park had a total of 124 personnel

certified as EMS providers. This number included 35 First Responders, 69 EMTs, 18 Park Medics, and 2 Paramedics. A total of 489 staff-days of EMS training was provided.

Youth Programs

Youth Conservation Corps

Yellowstone's 1997 YCC Program included 31 students from across the country. Four students were from Mooseheart, Illinois, and three from families of Moose members. Twenty-seven different projects provided a variety of work experience. Projects involved working jointly with members of the park's trail crew on both front and backcountry trails. This partnership proved successful and beneficial to both the YCC and Trails Programs. As has been the tradition with the program, during the last two weeks, all work crews were sent out on 10-day backcountry projects to culminate the work as well as the "Yellowstone experience."

Environmental education was incorporated into all aspects of the YCC program. This is a major focus of the program and one in which staff provides the students with opportunities to develop a better understanding, awareness, and appreciation for not only Yellowstone's resources but of regional and global issues affecting them.

The YCC Program continues to be financed by the Loyal Order of the Moose. This partnership has exceeded expectations, and the original commitment of \$1 million for Yellowstone has been passed. We have continued to maintain a strong relationship with the Loyal Order of the Moose, and they have committed to funding the 1998 program at a level of \$135,000. In an effort to spur continued support for our program, the Moose organization has moved the "Yellowstone Youth Fund" from their Youth Programs Office to their Community Service Office. This provides a greater incentive for local and state chapters to provide financial support.

Student Conservation Association

Yellowstone's SCA program continues to be very active and beneficial to both the students and the park. The park hired 16 students through the SCA Resource Assistant Program. These students worked with the naturalist staff in visitor centers, ranger staff in backcountry offices and trails, the park historian, and with the fisheries program on Yellowstone Lake. The resource assistants played a significant role in supporting park operations, and annual requests continually exceed the number of positions provided through the base funded positions provided to the park. Eight of sixteen positions were funded by park benefitting accounts and eight were funded at the Wahington level.

Two SCA High School Work Group Crews worked for one month in Yellowstone. One crew worked on a variety of projects based out of the Thorofare Ranger Station. The second crew worked with the trail crew staff on the South Boundary Trail. Joint efforts

between SCA Trail Crews and NPS trails operations have hit a snag relative to the issue of crew supervision vs. trail work supervision, and we continue to try and improve this relationship.

Corral Operations

At the end of 1997, Corral Operations had approximately 90 head of stock. This included seven mares bred to foal in the spring of '98, one weanling filly, one yearling filly, and four Percheron cross weanling horse colts. A total of eight animals were surveyed and sold at auction due to old age or unsoundness. Three animals were destroyed or died at Stephen's Creek due to various illnesses.

A total of six animals were purchased locally. Corral Operations traded four yearling fillies and one two-year-old filly for three two-year-old geldings and one three-year-old gelding. Corral Operations also purchased two yearling stud colts and one two-year-old stud colt from Theodore Roosevelt National Park. These horses came out of a wild horse herd.

In the winter of '96/'97, Corral Operations purchased 157 tons of hay for the bison quarantine at Stephen's Creek at a cost of \$19,850. It was an extremely severe winter, and local hay prices demanded as much as \$150/ton for hay.

Corral Operations purchased 120 tons of small square bales and 155 tons of large round bales. All hay was certified weed free and came from hay contractors in Riverton, Wyoming, and Big Timber, Montana. Corral Operations also purchased 3/4 ton of Styblyx minerals, 5 tons of grain, 5 tons of hay cubes, and 1 ton of salt.

Regular corral operation duties included providing health care of the stock herd including vaccinations, deworming and shoeing, training of young and new stock, supplying feed to the field stations, packing supplies for VIPs to various backcountry locations, and conducting stock use training for park personnel.

Corral Operations assisted in the bison operations at Stephen's Creek. Duties included hazing, trapping, feeding, and working bison in the pens to test for brucellosis and shipping bison to slaughter. Six horses were kept at Stephen's Creek through the winter for this operation.

Corral Operations put together a 14-horse frontcountry patrol consisting of all sorrel horses. This patrol was used for various activities during the park's 125th celebration including a visit by Vice President Al Gore.

Corral Operations put a team of mules and wagon to work in Slough Creek hauling various supplies and escorting VIPs to the backcountry.

Backcountry Management

	<u>1995</u>	<u>1996</u>	<u>1997</u>
# Backcountry Permits	7,268	6,899	6,550
# Visitor Use Nights	45,774	45,743	44,836
# Stock Use Nights	7,256	8,258	7,873

Backcountry use was down slightly in 1997 primarily due to the record snowpack and high spring water conditions. Several areas, including the Bechler and Thorofare trails, did not open until mid-July because of high water and washed-out trails.

Backcountry rangers and trail maintenance crews cleared a high number of trees in 1997. Research shows that most fire-killed trees fall 8-10 years after a fire. The major fire events Yellowstone experienced in 1988 will ensure that a high number of trees will need to be cleared for the next 2-3 years.

An advanced reservation system for backcountry campsites was introduced in 1996. Beginning April 1 of each year, visitors can make reservations by mail or in person for a \$15 fee. Reservations are limited to 60% of the campsites in an area. By the end of the 1997 season, 1,104 reservations had been made which produced \$20,260 of revenue for the park's backcountry management program. This reflects an increase of 32% over 1996 data.

Beyond Road's End is being reproduced by a donation through Canon Corporation. The brochure provides information on backcountry permits, where and how to make reservations, backcountry regulations, safety, fishing, weather, camping in bear country, and **Leave No Trace** outdoor ethics.

Park rangers attended the 6th Annual Rocky Mountain Area Backcountry Manager's Workshop. Workshop topics included an update on the servicewide Wilderness Steering Committee, fee collection/cost recovery update, cultural resource management, an Arthur Carhart Wilderness Training Center update, and commercial use in the backcountry.

Yellowstone participated in the **Leave No Trace Outdoor Ethics** educational program by sending one ranger to a **Leave No Trace Masters Course**.

<u>Limited Concessions Permits</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
# Concessions Permits	56	52	51
# Comm. Stock trips reported	616	548	541
# CPs transferred/terminated	0/2	0/4	0/1

Fifty-one saddle and pack stock outfitters operated in Yellowstone under Concessions Permits; three of these were llama packers. Over 200 outfitters and guides attended the annual June meeting.

Resource Management Operations

The RMO&VP Division is responsible for developing and implementing the Resource Operations Program that fulfills the broad direction outlined in Yellowstone's Resource Management Plan. District Rangers, Sub-District Rangers, and the District Resource Management Coordinators, in cooperation with the Division's Resource Management Operations Coordinator, jointly plan and accomplish the program.

Resource Operations Program 1997 highlights include:

Exotic Vegetation Management

RMO&VP staff is responsible for preventing, monitoring, and controlling exotic plant infestations. An aggressive, inter-divisional effort continued involving 150 park staff and 110 volunteers. Approximately 4,000 acres were surveyed with 80% of that spraying conducted along roadways and in developed areas and 20% in the park's backcountry. Forty-four species were treated on approximately 2,000 acres. An integrated weed management approach was used including mechanical (42%), chemical (39%), and cultural (19%) controls. The majority of control efforts were directed at 21 priority 1 and 2 species including knapweeds, toadflaxes, thistles, ox-eye daisy, houndstongue, St. Johnswort, and field bindweed. Early detection and eradication efforts continued on leafy spurge, diffuse knapweed, sulfur cinquefoil, and plumeless thistle. The revised Exotic Vegetation Management and Environmental Assessment is in draft with anticipated release in 1998. Staff produced an informational brochure addressing inspection of hay and construction equipment. Twenty-five monitoring locations were designated to evaluate effectiveness of weed control efforts. Managers were actively involved in several ecosystem weed initiatives including the Upper Madison, Henry's Fork, and Upper Snake River Weed Management Areas (WMA). The Greater Yellowstone Coordinating Committee (GYCC) weed managers met at Lake Lodge to increase coordination of weed management in the ecosystem. Other cooperative efforts during 1997 included development of a cost-share grant proposal for the National Fish and Wildlife Foundation's "Pulling Together" initiative involving ten partners in the Henry's Fork WMA; obtained a \$1,500 grant from Dow Elanco to support monitoring plant biodiversity and effects of control activities at selected infestations; cooperated with a joint DOI/DOD program to evaluate remote sensing capabilities in mapping exotic plant infestations; and staff involvement in the Wyoming Dalmation Toadflax Bio-Control Consortium and Montana Noxious Weed Awareness and Education Working Group.

Resource Management Workshop

The Tenth Annual Resource Management Workshop was held February 4-6, 1997. The workshop topic was Yellowstone Natural and Cultural Resources. Several visiting and park staff speakers were on the agenda including Dr. Richard Knight (Interagency Grizzly Bear Study Team) on grizzly bears, Dr. Pete Gogan, (USGS-BRD) on mule deer,

and Kerry Murphy on mountain lions. Yellowstone staff speakers included John Mack on bison management, Kerry Gunther on bear management, Jim Caslick on bighorn sheep and pronghorn antelope, Paul Schullery on historical wildlife observations, and Mike Phillips on wolf reintroduction.

Fisheries Management

RMO&VP staff, with the income generated by the fishing fee program, emphasized fishing education and regulation enforcement. Rangers contacted thousands of anglers, issued 106 fishing violations and hundreds of verbal warnings. Thirty-seven fisheries exit gate surveys were completed at the entrance gates to calibrate and complement the Volunteer Angler Report system.

Lake trout control: RMO&VP staff continued assisting in the control of non-native lake trout in Yellowstone Lake. Field staff coordinated informational contact with visitors and Amfac fishing guides who caught lake trout and produced a field form to report lake trout catches. Angler catches of lake trout included 250 catches in 1997. This was an increase from 176 angler catches in 1996, 47 catches in 1995, and 2 catches in 1994. Anglers contributed 23.6% of the total catch of lake trout in Yellowstone Lake since 1994. The remainder of catches were from gill nets set by the Aquatic Resources staff.

Assisted in fisheries management: RMO&VP staff worked closely with Aquatic Resources personnel to assist in implementing a parkwide fisheries program including monitoring native cutthroat trout population, surveying cutthroat trout spawning streams, controlling exotic lake trout including serving as a member of the resource team established to lead lake trout efforts, and implemented westslope cutthroat trout and fluvial Arctic grayling reintroduction programs.

Inventory and Monitoring

Staff monitored amphibians in cooperation with Dr. Charles Peterson, Idaho State University, at the South Entrance Pond, Harlequin Lake, and the Lake Village area. Dr. Peterson monitored on a monthly basis while park staff filled in on a weekly basis. Data are analyzed and reported by Dr. Peterson.

Staff conducted whitebark pine transects at Avalanche Peak, Pitchstone Plateau, Big Game Ridge, and Two Ocean Plateau. These transects were monitored in cooperation with the Bear Management Office and the Interagency Grizzly Bear Study Team.

RMO&VP staff monitored air quality at the National Atmospheric Deposition Program station (NADP) at the Tower Ranger Station including collecting and performing conductivity, pH, and volume measurements on 52 weekly precipitation samples. Staff also participated in four inter-site comparison studies, processed one "blind audit sample", underwent inspection and testing by a USGS contractor, and maintained the air quality station at the Lake Ranger Station including maintaining the Particulate

Monitoring Network (IMPROVE) sampler system, ozone effects sampling, and gaseous pollutant and National Dry Deposition Network (NDDN) program. Staff assisted the USGS with collection of snow samples to assess winter road corridor pollutants.

In cooperation with USFS (Northern Region), RMO&VP staff monitored gypsy moth presence parkwide. RMO&VP staff placed and retrieved 118 pheromone traps throughout the park.

Geothermal Management and Physical Resources

RMO&VP staff and volunteers monitored 81 thermal pools and geysers in the Upper, Middle, and Lower Geyser Basins for vandalism. Coins, cigarette butts, asphalt, sticks, rocks, and nails thrown into the thermal features were removed by hand. Protection of resources and visitor safety in thermal areas were addressed by park staff and the Geyser Observation and Study Association (GOSA). Clean-up of thermal features was also conducted in the West Thumb, Norris, and Mud Volcano areas. Old asphalt trails were removed in the Old Faithful Upper Geyser Basin in conjunction with boardwalk replacement. Staff again collected water samples at 11 locations throughout the year as part of a cooperative USGS/NPS program monitoring area geothermal activity. Field RMO&VP staff also monitored water flow in Reese Creek in response to irrigation rights.

Hazard Trees

Hazard tree surveys were conducted in every campground and developed area throughout the park. District staff conducted surveys and removed hazard trees or marked trees for removal in concession land assignment areas. At Madison Campground, over 6,000 trees were surveyed with 101 marked for subsequent removal by Amfac Parks and Resorts. In addition, park staff removed 30 trees from West District developed areas, roadside picnic areas and pullouts, 23 trees from Norris Campground, and 160 trees from the Grant Village Campground and developed area. Following tree removal at Madison Campground, 270 trees were hand-planted by RMO&VP staff and volunteers.

Wildlife Management

RMO&VP staff coordinated spring carcass surveys on the Firehole River, Norris Geyser Basin, and Heart Lake area with the Bear Management Office. Data was forwarded to the Bear Management Office and Interagency Grizzly Bear Study Team for analysis. Field staff at Lake and Grant Village monitored Yellowstone Lake tributaries for cutthroat trout spawning and associated bear activity at Lake, Bridge Bay Campground, and Grant Village Campground. Lake resource management staff initiated a study in cooperation with the park Bear Management Office and the Interagency Grizzly Bear Study Team to survey select backcountry spawning streams around Yellowstone Lake. This study was designed to determine changes in cutthroat trout spawning activity and associated bear use from previous surveys conducted 10 years ago and to ascertain the

number and types of bears using bear spawning streams from DNA analysis of hair samples collected on barb wire corrals. RMO&VP staff performed interpretive talks on bear habitat use and management for park visitors, classrooms, and professional meetings and orientated park employees to the park's bear management program and to living in grizzly bear habitat. Field staff implemented grizzly bear management operations including management of grizzly bears at Lake and Norris and black bears at Tower, Mammoth, and Old Faithful.

Other wildlife management projects completed include: managed habituated coyotes, elk, and bison parkwide; conducted integrated pest management programs for bats at Lake Ranger Station, Lake Lodge, Lake Hamilton's Store, Grant Village Camper Services Building, and the Bechler Ranger Station; and assisted with logistics, monitoring, and securing of wolf pen sites for the wolf reintroduction project.

Bison Management Operations

Bison management operations along the park's boundary with Montana continued to function under the terms of the Interim Bison Management Operating Plan.

During the fall of '96, a bison capture facility was constructed in the park near Stephen's Creek, and it began operation in January 1997. This represented a major shift in the management of bison near the northern boundary.

North Boundary

A total of 461 individual bison captured in the Stephen's Creek facility were shipped to slaughter. Seven bison were killed as a result of the capture activities while in the park. One additional bison suffering from parasite infection was dispatched while held at the facility. Thirty-one seronegative pregnant bison were sent to two research projects after being captured and tested at the Stephen's Creek facility. Two hundred and sixty-two additional bison were shot by Department of Livestock (DOL) personnel outside the park boundary; five of these were shot by NPS personnel assisting DOL, and one animal wounded outside the park by DOL was shot by NPS after it returned to the park.

West Boundary

Montana DOL constructed and operated a capture facility outside the park on the west boundary. They captured 113 animals and shipped 48 of those to slaughter. An additional 310 animals were shot by DOL personnel outside the park.

Bison Held and Released in the Spring

Because of the large numbers of bison being removed from the Yellowstone area, the park began holding captured bison at Stephen's Creek. A total of 107 bison were held in a large pen and released in the spring returning to the interior of the park.

NPS personnel involvement and costs for bison management operations is indicated below.

<u>West District</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
Monitoring	120 hrs.	252 hrs.	224 hrs.
Hazing	65 hrs.	135 hrs.	0
# hazing incidents	11	11	0
Shooting Ops.	45 hrs.	44 hrs.	0
# shooting incidents	4	2	0
Capture/Removal	0	0	80
TOTAL Staff Time	230 hrs.	431 hrs.	304 hrs.
Estimated Cost	\$5,060	\$9,482	\$6,688
 <u>North District</u>	 <u>1995</u>	 <u>1996</u>	 <u>1997</u>
Monitoring	152 hrs.	153 hrs.	330 hrs.
Hazing	52 hrs.	276.5 hrs.	238 hrs.
# Hazing incidents	7	37	N/A
Shooting Ops.	654 hrs.	103.5 hrs.	N/A
# shooting incidents	20	6	11
Capture/Removal	0	0	731
Corral Preparation	64 hrs.	520 hrs.	0
TOTAL Staff Time	922 hrs.	1,053 hrs.	1,299 hrs.
Est. Costs (\$22/hr.)	\$20,284	\$23,166	\$28,578

Other undocumented hours/cost were a considerable number of hours spent with media and VIP visits. Cost of hay and feeding hours are not included.

YELLOWSTONE CENTER FOR RESOURCES

Director - John D. Varley

Deputy Director - Wayne G. Brewster

In 1997, we celebrated the park's 125-year history with our fourth biennial science conference on *People and Place: The Human Experience in Greater Yellowstone*. As we did so, we acknowledged that while we have made some great strides in the appreciation of our cultural resources, we have much yet to do to provide the professional program of cultural resource management that we think Yellowstone's priceless heritage deserves. With regard to our natural resources, we made some outstanding progress—in endangered species recovery, fisheries management, and a potentially ground-breaking agreement to manage "bioprospecting." Management of the park's northern range and its bison, topics of management attention early in Yellowstone's history, remain high on public and staff agendas yet today.

Major projects undertaken by the many professionals in and assisting the Yellowstone Center for Resources (YCR) are summarized in this report. The Center prints an annual report, in which interested readers may find more detailed information about resource management and research projects in the park. Copies are on file in the YCR and the park's Research Library.

Sadly, 1997 will perhaps be most remembered by Yellowstone's staff as the year in which we lost a valued veteran member of our staff, park geologist Roderick A. "Rick" Hutchinson. Rick, accompanied by a volunteer researcher, Diane Dustman, died on March 3, 1997, in an avalanche during an annual inspection trip to the Heart Lake Geyser Basin. Several hundred friends and colleagues from the park and around the nation celebrated Rick's life, his humor, and his devotion to Yellowstone's resources in a memorial service at the Old Faithful Lodge. The resulting lack of geologic expertise was noted throughout the year.

Budget and Staffing

Yellowstone Center for Resources (YCR) park base funds were authorized at \$1,475,600. Because this amount was inadequate to support even permanent salaries for the division, resource operations were supplemented by \$90,000 of regional contingency funds for the Bison EIS, \$35,000 of park funds in a no-year account, and \$8,500 of regional contingency for GIS equipment. The park also received funds from a variety of other sources. This funding supported 42.89 full-time equivalent (FTE) staff who conducted work in natural and cultural resource management and advanced resource technology. Budget analyst Melissa McAdam reported the budget for the YCR as follows:

NPS	\$1,674,100
CRPP	228,400
NRPP	204,000
Fee Demonstration	340,600
Fishing Fees	213,400
Fed. Hwys.	433,700
Other Federal	398,300
Other	42,700
Private	48,000
TOTAL	\$3,583,200

Administrative support staff processed 91 personnel actions; 25 contracting actions worth \$710,500, mainly involving three projects (brucellosis research, Federal Highways cultural resource compliance, and the Montana Water Compact); 667 procurement actions worth approximately \$604,600; 129 travel authorizations; and 660 pieces of correspondence for staff throughout the YCR. Significant personnel actions included the March retirement of Norman A. "Norm" Bishop, Resource Interpreter, after more than 40 years of government service, the last 17 spent in Yellowstone educating employees, students, and the general public on natural resource issues. Wolf Project Leader Mike Phillips resigned in June.

Resource Team Projects

Resource teams are convened as appropriate by the park's Resource Council and assigned to specific, defined projects. Resource teams are interdisciplinary and cross-divisional. Resource specialists from the YCR worked on the following resource team projects:

Bison Management. A long-term effort to develop an interagency bison management plan continued. The NPS, USDA Animal and Plant Health Inspection Service (APHIS), U.S. Forest Service, and the state of Montana continued to meet and develop alternatives for a draft plan and environmental impact statement (EIS) rescheduled for public release by June 1998. Due to high levels of concern over the nearly 1,100 bison removed from the park (killed or shipped to slaughter) during the winter of 1996-1997, the previously approved *Interim Bison Management Plan* was reevaluated and adjustments were developed in an effort to reduce management-caused bison mortality. Federal agencies sought to reduce the number of bison that would be shot or shipped to slaughter should extreme winter weather conditions cause movement of bison to or beyond the boundary. The NPS implemented the adjustments at the onset of winter 1997-1998. Weather conditions in the early winter were mild and no bison had been captured or killed at the northern park boundary by the end of the year.

Exotic Vegetation Management Plan. The vegetation management biologist served on a team charged with updating the *Exotic Vegetation Management Plan* and compiling an accompanying environmental assessment. He submitted data on chemical use to control exotic vegetation over the past nine years as well as a section of the effects of control on the

soil resource, reviewed other sections of the draft plan, and initiated an analysis of the existing weed database to provide spatial and temporal baseline statistics for inclusion in the EA.

Grizzly Bear Conservation Strategy. The Yellowstone Ecosystem Managers' subcommittee of the Interagency Grizzly Bear Committee had previously assigned an interagency team of biologists to complete a *Conservation Strategy* document to provide guidance for managing grizzly bears and their habitat if and when the population should be removed from the list of threatened species. In 1997 two staff biologists continued to attend meetings and prepare a strategy based on consultations with park managers and other biologists. The original goal to have a draft plan in late 1996 was postponed until 1998. High levels of human-caused grizzly bear mortality in 1995, 1996, and 1997 prevented recovery goals from being achieved for the two consecutive years required before the USFWS can consider a change in status for the Yellowstone grizzly bear population. The team awaited results of several habitat analyses needed to develop habitat-based recovery goals and related monitoring strategies for the draft document they hoped to present to the ecosystem managers by mid-1998.

Lake Trout in Yellowstone Lake. Following the discovery of lake trout in late summer 1994, experimental gillnetting and data collection continued. Three different netting strategies were used to net a total of 811 lake trout. Anglers caught another 240 lake trout, bringing the total to just over 1,050 lake trout caught in 1997. Another lake trout spawning area was discovered in the West Thumb, and future control efforts will be targeted there. Significant progress was made in filling needed vacancies on the Aquatic Resources staff, but the leader position was still filled by volunteer Jack McIntyre, saving the park money but postponing the acquisition of a permanent employee to provide leadership and continuity for this priority program.

Opal Terrace/Executive House. This committee continued to discuss the encroachment of the Opal Terrace thermal feature on the historic Executive House in Mammoth. A University of Utah field crew working in the park documented the historic Executive House at Opal Terrace for its Historic American Building Survey.

Research Permitting System. The park's revised permit system, implemented in 1996, resulted in several major new research projects being considered and approved in 1997. These included projects investigating bison ecology and disease, and effects associated with wolf restoration.

Road Reconstruction Planning. Work to inventory resources in association with park road segments (Arnica Creek, East Entrance, Dunraven Pass, Madison to Norris, Mammoth to Gardiner, and Northeast Entrance) and assess the impacts of road reconstruction continued to occupy large portions of cultural and natural resource specialists' work time, as well as require significant effort by the park's planning and compliance staff.

Winter Visitor Use Management. Park superintendents and national forest supervisors in greater Yellowstone agreed to participate in a Winter Visitor Use Management effort to provide updated information on the status of winter use and options for future management. The team produced a preliminary report and presented it to the public; YCR staff assisted in production of the report and an associated newsletter.

Wolf Restoration. The goal was to restore to the ecosystem a population of gray wolves that includes at least ten packs that produce pups for three consecutive years. When this is achieved and similar populations are present in central Idaho and northwestern Montana, the gray wolf will be removed from the list of endangered species and managed as resident species by the respective states.

Due to unexpectedly high levels of reproduction in the first two years of the project, the decision was made to forego additional transplants of wolves from Canada after 1996. Wolf project staff continued to monitor the movements, behaviors, and welfare of more than four dozen wolves. Thirteen litters were born to nine packs in 1997. The Druid Peak, Rose Creek, and Chief Joseph packs had two, three, and two litters, respectively. Six other packs each had one litter of pups. In total, 67 pups were born. Litter sizes ranged from 4 to 11 and the average was 5.2 pups. Thirty-two wolves died in 1997. Sixteen (50% of the total) of these deaths were pups. Among adult and yearling wolves, five (17%) wolves were killed by Wildlife Services personnel because of livestock depredations, three (9%) were illegally shot, three (9%) died of natural causes (old age and intraspecific strife), two (7%) were legally shot by ranchers because the wolves were seen in the act of killing livestock, two (7%) were hit by vehicles, and one (3%) was killed in a trap set for coyotes.

The park staff devoted to this project received considerable assistance from volunteers and a new program using student interns. Project leader Mike Phillips, in charge of the park's wolf restoration program since autumn of 1994, left Yellowstone in June for private employment with Turner Enterprises. Project biologist Doug Smith was the only remaining permanent employee working fulltime on wolves throughout the remainder of the year.

CULTURAL RESOURCES (Branch Chief Laura Joss)

The Branch of Cultural Resources received 17.9% of the Center's budget in FY 1997, which paid for 8.63 FTE. The combined effects of Yellowstone's 125th anniversary celebration and the cultural theme of the park's fourth Biennial Conference placed an unprecedented amount of attention on Yellowstone's cultural resources in 1997. These events provided new information and forged new partnerships between the park and researchers, supporters, and neighbors. In addition, staff time was spent on continuing resource inventories, evaluation, report submission, and compliance. Ongoing cooperation among divisions continued, and training on cultural resource identification and management were held with the Divisions of Resource Management Operations and

Visitor Protection, Interpretation, and Maintenance. The park's re-engineered National Historic Preservation Act Section 106 process continued to be implemented and refined. Funding was obtained from Federal Highways (\$166,100), the Cultural Resources Preservation Program (\$228,400), Fee Demonstration Program (\$48,700), and the Yellowstone Association (\$21,700). These funds supported archeological inventories and monitoring; historic structure inventories; historic research; archival, library and museum collection management; library operation and automation; and projects related to the park's 125th anniversary.

Staff from the park and Rocky Mountain System Office continued planning and research efforts for a Yellowstone Heritage and Research Center, a collection storage, research, and exhibit facility the park hopes to build in the foreseeable future. Contract architects produced draft concept designs for a facility in Mammoth, and site testing continued.

Branch staff spent time disseminating information through presentations to park staff, visitors, VIPs, and outside groups; special walking tours and tours of the archives, library and museum storage areas; classes for the Yellowstone Institute, the annual Resource Management Workshop and employee orientations; and numerous interviews to radio stations, newspapers, and film crews. They also participated in March for Parks and Earth Day celebrations with informational tables and presentations.

Archeology. Archeological cooperators from the Museum of the Rockies (Montana State University) and the Wyoming State Archaeologist's Office provided the bulk of the fieldwork, working together with archeologist Ann Johnson. Volunteers also provided over 850 hours of assistance to the archeology program.

Fieldwork continues to support road improvement projects. National Register testing was performed on eight sites around the park in support of the Federal Highway upgrade of park roads.

One testing project that received considerable attention from the press and visitors was immediately beside the road one-half mile south of the North Entrance. Also, the Soda Butte Soldier Station was mapped using remote sensing techniques and several depressions were tested to verify their function. Materials on the military in the park and on the soldier stations in particular were gathered at the National Archives.

The 500-year flood event in spring eroded the Yellowstone River banks and exposed many sites; we tested four sites to collect data that was being lost. The Ryder site in the Black Canyon of the Yellowstone is extremely important. It is very large and contains at least three stratified components, one of which represents the Intermountain Tradition—believed to be the prehistoric archeological expression of the historic period Shoshone. Exceptionally well-preserved archeological bones from deer, elk, pronghorn, beaver, unidentified bird, rodents, and large ungulates were recovered. Data from all the sites will shed light on prehistoric human predation of ungulates and identification of fetal bone

can be used to identify seasonal occupations. The preliminary hypothesis is that at least some of the sites in the Black Canyon of the Yellowstone represent winter campsites.

Cultural Landscapes. The Cultural Resources Branch and the Branch of Landscape Architecture in Maintenance jointly manage Yellowstone's cultural landscape management program. A cultural landscape inventory of the Stephens Creek nursery and administrative area was conducted by a contractor. Other areas were identified as high priorities (Fort Yellowstone Mammoth Hot Springs, Fishing Bridge, Old Faithful), and funding sources for their inventories were being sought.

Cultural Resource Inventory and Management. Catherine Lentz and other staff reviewed and/or completed Section 106 compliance for 138 projects and 26 Resource Council project clearances. Staff also participated on the Research Permit Review Panel. A sample of the projects involved included the Fishing Bridge Museum Task Directive, the proposed Heritage and Research Facility, Snow Lodge consultation, rehab/repair projects, construction designs, a Fort Yellowstone interpretive brochure, accessibility projects, hazard fuels reduction, and cultural landscape inventories.

The Tower Historic District was determined to be eligible for listing on the National Register. Six other National Register nominations were in process in 1997 for the Grand Loop Road, East Entrance Road, Northeast Entrance Road, North Entrance Road, and the West Entrance Road.

Ethnography. Tribal contacts from the Native American groups affiliated with the park (Blackfeet, Confederated Salish and Kootenai, Crow, Nez Perce, Northern Arapaho, Northern Cheyenne, Shoshone-Bannock) were notified regularly regarding projects and issues. Specific requests were made by the Gros Ventre/Assiniboine and Rosebud Lakota tribes to be consulted regarding bison issues. In addition to honoring these requests, park staff participated in events that the Rosebud Lakota organized near the park to discuss bison issues. These included a Day of Prayer and a Council of Elders meeting. Other contacts with affiliated tribal members occurred when park staff attended a traditional Crow Sun Dance in Pryor, Montana.

Contractors Larry Loendorf and Peter Nabokov continued extensive research in the park and outside archives for the park's *Ethnographic Overview and Assessment*. Park staff provided assistance with photograph reproductions, research, and updates on current issues.

Historic Structures. The cultural resources specialist worked closely with the contractor on inventories and evaluations of historic structures for potential inclusion on the National Register. At the close of the year, 95 percent of these structures had been inventoried. Another staff member conducted similar work for the Bechler, East Entrance, and Canyon Village areas and for one building at Norris. Inventory of the park roads' secondary features continued on the Arnica Creek to Little Thumb Creek/Bridge Bay to Lake and Northeast Entrance road segments. Staff reviewed draft documents and

provided missing information to update the List of Classified Structures, and participated in a building survey of Executive House that is threatened by an encroaching thermal feature (*see Opal Terrace/Executive House Resource Team*).

History. Intermountain Field Area-Rocky Mountain Support Office Historian Christine Whitacre was detailed to Yellowstone for the month of July to perform duties of the park's vacant historian position. She conducted historic structures inventory training for park staff at the Nez Perce Patrol Cabin, surveyed the Otter Creek area to prepare its historic overview, and completed a Determination of Eligibility to the National Register for the Tower Falls Campground water supply. She also visited the Bechler Soldier Station and produced an outline of potential historic preservation projects needed to help preserve the building.

A three-part Historic Resources Study is being prepared by a Support Office historian. Part one, the history of park transportation, is complete. Part two, the history of park concessions, and part three, the history of park administration, were still underway in 1997. These volumes will form the basis for nominations and boundaries for all National Register-eligible historic structures and districts.

Library and Archives. The Research Library served 650 patrons and circulated more than 300 books, videos and other materials. The staff filled more than 100 Interlibrary Loan requests and responded to 62 telephone inquiries. Funding from a Yellowstone Association grant allowed the library staff to continue the card-catalog computerization project; thus far they have computerized 80 to 90% of the books, and about 40% of the vertical files.

The librarians accessioned 269 new items, including several very rare items of historical significance as well as the R. A. Hutchinson collection and materials from former National Park Service researchers Don Despain and Wayne Hamilton. Of the new acquisitions, 70 were donated by interested parties inside and outside of the park. Two important gifts were acquired for the library: Dean Larsen of Provo, Utah, donated the 1875 one-of-a-kind copy of *The Yellowstone and the Great Geysers* by General W.E. Strong (Strong's personal copy). Ann Martyn of San Antonio, Texas, donated the original 28-page handwritten manuscript of J.F. Cummings's 1881 trip into Yellowstone with the governor of Wyoming. A number of biographical materials of J.F. Cummings were also received.

Archivist Lee Whittlesey oversaw the acquisition of the logbooks of Norris Geyser Basin (1964-1974) and a palette of materials from the park's Fire Cache. We received donations from Jack Crellin of Salt Lake City (photographs); Allen Crawford (photographs); Dave Bank (photographs); and Albert Noyes (scrapbook). With the help of Roger Whiteside (CSS), the archivist placed the 700-page master archival inventory onto the Internet. More than 200 boxes of archival materials from the National Archives and Records Administration (NARA) in Denver were inventoried and accessioned into the archives. During a trip to NARA's Kansas City offices, the archivist located all of the 1950s-1960s records of Yellowstone's attempts to open the park for a winter season,

many records relating to the history of bison operations at Lamar Buffalo Ranch 1931-1954; a number of records relating to the northern Yellowstone elk herd 1935-1955; and maintenance records that relate to construction of buildings at the Mammoth YCC camp, and telephone, radio, and electric lines. The archives now has an entire box of documents on Yellowstone geyser history and activity, which includes all Internet postings from the Geyser Observation and Study Association for the years 1995-1997.

The archivist assisted 58 researchers including NPS Historian Marcy Culpin, Montana State University history graduate students, Dr. Marly Merrill for her new book on the Hayden survey, and former Congressman Pat Williams, preparing for an interview with Garrison Keillor.

Museum Collections. Susan Kraft, museum curator, coordinated a number of loans made to museums around the country in conjunction with the park's 125th anniversary. These included the Autry Museum of Western Heritage, for its exhibition "Western Wonderlands: Touring America's National Parks"; the National Building Museum, for "Lying Lightly on the Land: Building America's National Park Roads and Parkways"; and the Livingston Depot Museum, for its 125th anniversary show, "Railroads, Livingston & Yellowstone National Park." In December, the National Gallery of Art in Washington debuted the first-ever retrospective of the works of Thomas Moran, featuring a dozen original watercolor sketches and a sketchbook of Moran's from Yellowstone's collection, in addition to various William Henry Jackson photographs from the park archives. The National Gallery's staff began work on a CD-ROM featuring photographs from four albums donated to the park by Jackson himself.

The Yellowstone Park Foundation funded a proposal to have one of the park's horse-drawn vehicles professionally conserved. A Shaw & Powell tent-camping company Studebaker buggy was selected for the project, both for its rarity and for its value in interpreting one of the ways in which visitors of relatively modest means toured the park before the onset of the automobile era in Yellowstone. The buggy was transported to Cody to begin its conservation. Museum technicians made substantial progress in cleaning, stabilizing, documenting and improving storage conditions for the park's historic vehicle collection. Technical assistance on the care and preservation of historic vehicles was provided to Glacier National Park, Grant Kohrs National Historic Site, the Montana Historical Society (Virginia and Nevada Cities), and other museums.

More than 10,000 artifacts and specimens were added to the museum collection. More than 6,000 items were cataloged and properly housed, including aerial photographs, slides, and other materials documenting the 1988 fires. More than 400 scholarly researchers, journalists, filmmakers, park staff members, concessions employees, and visitors used the collection during the year, and more than 3,000 hits on the new museum/archives/library link to the park's web site were recorded.

Paleontology. Yellowstone's paleontology program is jointly managed by the cultural and natural resources branches. In 1997, logistical assistance was provided for the

excavation of a plesiosaur specimen by a team from Georgia College, led by NPS paleontologist Vincent Santucci. Cultural resource staff also provided the survey team with information regarding previous surveys of the park and assisted with the study of paleontological specimens in the museum collection.

NATURAL RESOURCES (Branch Chief Stu Coleman)

Natural resources management received 48.6% of the Center's budget and paid for 16.23 FTE. Dominating staff time and funding were efforts to control non-native lake trout in Yellowstone Lake, evaluate options for restoring westslope cutthroat trout, manage bison near park boundaries, and monitor such resources as vegetation, air quality, grizzly bears, and a variety of bird species. Following the death of the park's only geologist, the staff struggled to fill this gap personally and professionally.

Base funding included \$458,300 for base-funding of overall BNR programs and activities, an additional \$201,000 for wolf recovery, and \$84,500 for bison management and planning. Federal Lands Highway Project monies (\$182,600) continued to help support permanent and temporary employees, as significant portions of staff time were spent in resource data collection, data analysis, and report submissions required for the highway rebuilding program. Fee Demonstration provided an additional \$257,300 in support for the branch, other federal funds provided \$7,700, and private monies contributed \$12,700 to the overall branch budget and another \$27,100 to the wolf project. Natural Resource Preservation Program funding provided \$204,000 for bison planning and management, and fishing fee monies added \$213,400 to the management of aquatic resources.

Air Resources. Yellowstone joined Grand Teton National Park, Red Rock Lakes National Wildlife Refuge, and the six adjoining greater Yellowstone area national forests in the formation of a Greater Yellowstone Area Clean Air Partnership. The purpose of the partnership is to serve as a technical air quality advisory group to the Greater Yellowstone Coordinating Committee and to facilitate information exchange, reduce duplication and increase efficiency. Resource management specialist Mary Hektner was designated as Yellowstone's representative.

Bear Management. Biologist Kerry Gunther and his staff received 1,302 reports of bear sightings and sign in the park. These reports included 579 observations of grizzly bears, 464 of black bears, and 49 of unidentified species of bear. In addition, there were 60 observations of grizzly bear sign, 18 of black bear sign, and 132 of sign from unidentified species of bear. The first recorded grizzly bear activity of the year was a track observation east of the Nez Perce patrol cabin on March 14. The first recorded black bear activity was a sighting on April 7 near Crystal Bench. The last recorded observation of black bear activity was a sighting east of Soda Butte on November 20. The last recorded observation of grizzly bear activity was on November 21 when a large adult bear was observed in the Antelope Creek drainage defending a wolf-killed elk carcass from members of the Rose Creek wolf pack.

There were 163 bear jams and 2 incidents in which black bears obtained human foods or garbage. There were 17 reported confrontations between bears and people in which no one was hurt. There were 2 bear-caused human injuries (1 by a grizzly bear and 1 by a black bear) and 2 cases of bear-caused property damage (in which bears did not obtain human foods) within the park.

One black bear and one grizzly bear were trapped in management actions. The black bear was translocated to a remote backcountry area and the grizzly bear was released on site. No bears were trapped and removed from the park. There were 10 known or probable human-caused grizzly bear mortalities in the ecosystem during 1997, and 8 known or probable natural mortalities, one of which was inside Yellowstone National Park (a male cub-of-the-year killed by a larger bear.) There were no known black bear mortalities within the park.

Grizzly bear population monitoring, done in cooperation with the Interagency Grizzly Bear Study Team, revealed 31 adult females and 62 cubs-of-the-year counted in the ecosystem—another good year for reproduction, supporting the ten-year trend of an expanding population. Of these bears, 14 (45%) of the adult females and 30 (48%) of the cubs were observed in the park. Ecosystemwide, this was the second highest number of females with cubs and the second highest number of cubs ever counted.

Except for fall foods, the abundance of important high-quality bear foods in the ecosystem was average to above average. The winter of 1996-1997 was the most severe on record since the winter of 1988-1989. During spring, an above-average number of winter-killed elk carcasses were available for bears to scavenge. Although bison carcasses were abundant in thermally influenced ungulate wintering areas, they were noticeably scarce on the northern winter range. Approximately 1,100 bison were captured and killed or shipped to slaughter (*see Bison Management*) and therefore there were very few bison carcasses available on the northern range. Overall counts of winter-killed ungulate carcasses were the highest since 1989 in all survey areas. During spring, scavenging ungulate carcasses and digging for pocket gophers and their root caches were the most commonly observed grizzly bear feeding activities. Grizzly bears also consumed over-wintered whitebark pine nuts stored in red squirrel middens from the above-average pine nut crop the previous fall. Elk calves, an important late spring and early summer food, were preyed upon extensively by some individual bears.

Numbers of spawning cutthroat trout in Yellowstone Lake tributaries were higher in 1997 than in 1996, and were similar to the long-term averages (1989-1995) on most streams, except for those in the West Thumb area which were below average. During mid-summer, digging for biscuitroot was a commonly observed bear feeding activity. The ecosystem had above-average winter snowfall and above-average summer precipitation, keeping grasses, sedges, forbs and other grazing food resources succulent late into the summer. Army cutworm moths, an important late-summer and fall food, attracted large numbers of bears to high-elevation moth sites. Digging for truffles and biscuitroot were also commonly observed late-summer and fall grizzly bear feeding activities. The

production of whitebark pine nuts during the fall was below average in most areas of the ecosystem. Due to the abundance of most bear foods, including moths, truffles, and biscuitroot during late summer and fall, the number of bear-human conflicts and confrontations reported in the park in 1997 was below average.

Birds. Bird biologist Terry McEneaney worked fulltime monitoring and managing bird populations in the park. Endangered peregrine falcons continued to do well; a record 25 peregrines fledged in the park from 13 eyries. Bald eagles, recently downlisted to "threatened" in most regions of the country, fledged 14 eaglets from 21 active nests. The park was meeting its goal of maintaining bald eagle populations at levels with high probabilities of persistence.

The greater Yellowstone trumpeter swan population continued to show signs of being in trouble; lack of recruitment, weather, and predation all result in a tenuous existence for these birds. In the park, numbers of adult birds in the summer ranged from 20 to 23; cygnets hatched from 13 of 5 nest attempts, but none of these birds reached maturity. The osprey population maintained its vigor despite natural variations in annual productivity. In 1997, 84 pairs nested, slightly more than the 11-year mean of 75.8. Osprey production, which is extremely variable year-to-year due to weather, resulted in 64 young fledged. The bird biologist observed 19 pairs of common loons, and 6 loonlets fledged. Compared to the last 10 years, the fewest documented loon nesting attempts (5 in each year) occurred in 1996 and 1997. Aerial surveys of colonial nesting birds on the Molly Islands, conducted four times in the summer, revealed another high-water year on Yellowstone Lake, resulting in poor production such as was seen in 1996.

A three-year raptor migration study was completed on Mt. Washburn; 973 raptors were counted passing by the summit compared to 822 in 1995 and 1,226 in 1996. A total of 17 species were recorded; 4 species made up 80.5% of the sightings, but unusual sightings included a broad-winged hawk (only the third park record). For the fifth year, the park participated in the North American bird migration count on May 10, 1997, recording 2,081 individuals of 93 species. Five breeding bird surveys were completed on three survey routes, and 1997 marked the 25th year for the park's annual Christmas bird count, during which two species new to Yellowstone's Christmas count were recorded—a house wren and a marsh wren.

The bird biologist participated in working groups for peregrine falcons, bald eagles, trumpeter swans, and neotropical migrants. Following up on partnerships drawn in 1996 between Yellowstone and reserves in Mexico, McEneaney visited and hand-delivered recycled NPS uniform items donated by Yellowstone employees, which were greatly appreciated by the staff of Manatlan Biosphere Reserve in Jalisco.

Disturbed Lands Reclamation. Reclamation of two abandoned park gravel quarries was completed as part of a cooperative effort between the park and the Wyoming Department of Environmental Quality's Abandoned Mine Land (AML) Division. The project, funded by a grant from the AML, permanently closed the Little Thumb and Dry Creek quarries

and associated roads. Gravel eroding from the 11.5-acre Little Thumb quarry raised the bed of Little Thumb Creek, causing it to dry out during trout spawning runs. As a result of the restoration, it is estimated the effective habitat for both spawning trout and associated grizzly bear fishing was reduced by half. The project deepened the creek, recontoured the quarry to prevent additional erosion, removed the access road, and revegetated the area with native species. Reclamation of the 5-acre Dry Creek quarry was similar, allowing the removal of the 4.3-mile-long access road and reclamation of about 1.6 acres of wetland.

A grant from the Canon Corporation was used to begin reclamation of the old Turbid Lake road. In 1997, park crews decompacted approximately 0.5 miles of the abandoned roadbed to encourage revegetation; they also excavated stream crossings and reshaped road cuts to restore original drainage, and mulched, transplanted, and seeded the area with native plant species. While the grant was not sufficient to reclaim the entire road, substantial work was accomplished and additional funds are being sought to complete the project in 1998.

Fish and Aquatic Resources. The branch continued rebuilding the aquatic resources program post-U.S. Fish & Wildlife Service by adding fisheries biologist Jim Ruzycki and two fisheries technicians, Jeff Lutch and Brian Ertel, to the staff. Non-native fish control in Yellowstone Lake remained a priority. Lake trout gillnetting began earlier than in previous years (May 29, 1997), due to the early ice-out, and ended on October 17. Three different netting strategies were used to net 811 lake trout, an increase from the 580 lake trout captured during the previous year. Anglers caught another 240 lake trout, bringing the total to just over 1,050 lake trout caught in 1997. Areas that produced high catch rates last year were again good places to catch lake trout. Most adult lake trout are still in the West Thumb Basin and Breeze Channel areas. Preliminary results from hydroacoustic surveys (electronic fish finders) confirmed the suspected distribution of lake trout and revealed the deepwater (> 40 m) distribution of medium-sized (300- to 400-mm) lake trout. The big news was the discovery of at least one new spawning ground located in West Thumb where more than 150 adult lake trout were caught; the fish were caught in deep water (20 m) and several of the females had already spawned. More than 230 lake trout (up from 180 during 1996) were also captured at a previously known spawning location near Carrington Island.

The aquatic resources staff also worked on plans to restore westslope cutthroat trout, which historically were distributed throughout the Madison and Gallatin river drainages but have been reduced to small headwater populations as a result of habitat loss, overfishing, and competition from non-native fish. Candidate streams for reintroduction were reviewed and work began in July to remove non-native fish from Canyon Creek through electrofishing. By October, approximately 5,000 brown, brook, and rainbow trout had been removed from Canyon Creek and placed in the Gibbon River drainage. Staff improved an existing artificial fish barrier to prevent non-natives from re-entering the stream. To identify genetically pure populations of westslope cutthroats remaining within park boundaries, fish surveys were performed in Fan, Specimen, and Grayling creeks in the northwest portion of the park.

The Volunteer Angler Report (VAR) system was developed beginning in 1973 to annually monitor parkwide angling in Yellowstone. Nearly 2.9 million people visited Yellowstone in 1997. The park issued approximately 67,900 fishing permits this year, and anglers returned 3,666 usable VAR cards (5.4% of those issued). Parkwide angler use (angler fishing days) and effort (hours spent fishing) were 240,141 angler days and 587,781 hours, respectively. Although angler use (in terms of days fished) increased 3% from 1996, the amount of fishing effort per day decreased from 631,700 hours in 1996. Anglers landed 558,121 fish and creeled about 32,120 in 1997, releasing approximately 94% of all fish landed. The average angler fished 2.5 days, 1.4 different waters/day, and 2.5 hours/day. Mean annual landing and creel rates were 0.95 and 0.05 fish/hour, respectively. Nearly 78% of single-day anglers landed one or more fish. An estimated 83% of park anglers reported being satisfied with their overall fishing experience.

Geothermal Resources. Major eruptive geysers continued their activity despite the absence of the 28-year park veteran geyser-watcher, Rick Hutchinson. Data collection and reporting, however, suffered a major lapse, and the future of the park's earth sciences program was at a cross-road. In July, park managers invited scientists from academia, the U.S. Geological Survey, and the NPS to evaluate the park's geologic and hydrologic program needs, discuss priorities, and recommend strategies for addressing those needs. The group recommended that the geothermal geologist position be refilled to continue and expand upon the kinds of geologic and public relations activities that had been done by Rick. They recommended that a hydrologist be hired to address water issues and mandates, and to help monitor hydrothermal discharges. They also recommended that a geologist specializing in surficial processes be hired to address what occurs in streams and on the landscape, and how park activities affect them. At the end of 1997, the existing vacancy remained, and the new positions were being considered along with other proposed new park staff positions.

Park staff hosted a mini-conference in September to discuss earth science research being conducted in the park. USGS and university scientists and park staff gave presentations on geological, geochemical, geophysical, geothermal, hydrological, and microbial topics.

Integrated Pest Management. The park's IPM coordinator, management biologist Roy Renkin, responded to 28 different pest complaints parkwide during 1997. Noteworthy pest management actions included dealing with ants in the YACC housing area in Mammoth, bats in the Fishing Bridge, Lake, and Norris areas, and structural damage to pillars in the dining room of the Roosevelt Lodge (which initially appeared to be caused by insects, but turned out to be a case of advanced dry-rot caused by water damage).

Mine-related Issues. Resource management specialist Mary Hektner and others devoted much less time than in previous years tracking the proposed New World gold mine located less than three miles from the park's northeast boundary. In 1996, President Clinton announced an agreement between the United States, Crown Butte Mines, Inc., and the Greater Yellowstone Coalition, which provided for cessation of the permit

application process for the proposed mine and acquisition (by exchange) of property interests (estimated at \$65 million) held by Crown Butte. Crown Butte would dedicate \$22.5 million to mandatory environmental restoration and reclamation. Congress had appropriated the money, legal details were being worked out, and interested parties hoped that the agreement would be finalized in 1998.

Staff continued to monitor the Mineral Hill Mine project near Jardine, Montana, and attend community task force meetings. TVX Gold, Inc. suspended operations in September, 1996, pending assay results from exploration in the headwaters area of Crevice Creek, which flows into the park. With the exception of water management operations and the removal of hazardous chemicals as required in their permit, operations remained shut-down as of December 31, 1997. Park staff also continued to work with NPS water resources staff to explore options for treatment and removal of the McLaren mine tailings located upstream and just outside the park's northeast boundary.

Ungulates. Park staff shared costs and time with the Northern Yellowstone Cooperative Wildlife Working Group to complete counts of ungulate herds on the northern range. Poor flying conditions and mild winter weather prevented completion of an early winter elk count prior to December 31, 1997, but the count was completed in January 1998 and results will be reported in the 1998 YCR Annual Report. In a helicopter survey on May 6, a total of 1,748 mule deer were counted on the northern range.

A count of pronghorn on April 21 revealed only 210 animals and, due to continued concerns for the long-term viability of this population, park staff increased their efforts to survey the herd in winter. On a November 22 flight, biologist Wendy Clark counted 251 pronghorn. Volunteers Jim and Edna Caslick conducted ground surveys for the third consecutive year to assess the distribution of pronghorn and evaluate the effects of bison management activities on the pronghorn.

In March, 16 bighorn sheep were captured and radiocollared for a study supervised by Dr. Lynn Irby at Montana State University. Their goal is to learn about sheep movements and behavior in relation to road traffic and human activity. On May 6 and May 12 a total of 199 bighorn sheep were counted in an aerial survey. Of that total, 95 were surveyed inside the park. The annual early winter ground count of northern range bighorn sheep in December resulted in 97 bighorns being counted (38 rams, 52 ewes, and 7 lambs). Ratios were 13 lambs/100 ewes and 73 rams/100 ewes. During 1997, known sheep mortalities in the park included five adult ewes and two adult rams. One ewe died as a result of capture and collaring activities in March, and another ewe was killed by a mountain lion in July; causes of the other deaths are unknown.

Vegetation. In conjunction with the parkwide road reconstruction program, vascular plants considered "species of special concern" were surveyed for by botanist Jennifer Whipple along the road from Tower Junction to the Chittenden Road. Possible trail reroutes near Bechler Falls, Artist Paint Pots, a section of Fawn Pass, along Mountain Creek, and near Eagle Pass were also surveyed to prevent inadvertent impacts on species

of special concern. This field work resulted in several additional populations of rare plants being located. Two species of vascular plants previously not reported as occurring within the park were discovered; *Dryopteris expansa* (northern wood fern) was brought to the attention of park personnel by a visitor. *Polygonum sawatchense* Small (sawatch knotweed) was located on Dunraven Pass during surveys for species of special concern.

The last decade has seen a tremendous increase in the number of exotic vascular plants reported in Yellowstone. Part of this can be attributed to an increased awareness and aggressive surveys to document the presence of exotic plants, but there may also be an increase in the rate of arrivals. This year, in striking contrast to the last few years, there were apparently no new exotic species located in the park.

Vegetation management biologist Roy Renkin worked with the RMOVP division to accomplish objectives for several ongoing programs. He conducted hazard tree management training combined with surveys of Norris Campground, and participated on a resource team writing an *Exotic Vegetation Management Plan*. Subsequent hazard tree removal was accomplished in other park areas by district resource coordinators and their staff. He also participated in the sampling of 15 long-term pre- and post-fire vegetation plots; served as an instructor for beginning- and intermediate-level fire behavior training courses; and collaborated with a University of Montana graduate student regarding potential thesis work using GIS technology to model fire behavior.

The vegetation biologist completed field work for one phase of a study of the elk-aspen-fire relationship. Data analysis was 40% complete. He began field work on a collaborative study with Oregon State University regarding temporal changes in aspen across the northern range, and served as a liaison with the Intermountain Forest and Range Experiment Station, Ogden, Utah, to help establish sampling of 10 Forest Health Monitoring plots in the park as part of a systematic, nationwide effort. He continued to serve as co-leader on an interagency group charged with development and implementation of a Cumulative Effects Model to assess grizzly bear habitat, accomplishing numerous technical tasks needed to complete a habitat assessment for use in completing the *Grizzly Bear Conservation Strategy*.

Water Resources. Park staff continue to work with NPS Water Resource Division staff in the implementation of the MT/NPS Reserved Water Rights Compact. Stream flow, pH, and conductivity were monitored at the gauging station on Soda Butte Creek near the park's northeast boundary. The Water Rights Compact requires that Montana notify the NPS of all well permit applications within the Yellowstone Controlled Groundwater area. The state received 29 applications in 1997. The NPS objected to one application for a change in place of use and the purpose of use of a warm-water well within the Yellowstone Controlled Groundwater area. The matter remained unresolved as of December 31, 1997.

Wetlands. Mary Hektner and her assistants mapped and described wetlands along the road between Tower and Canyon as part of the parkwide road reconstruction program, and in the Slough Creek Campground, East Entrance, Sedge Creek, and Lake Housing

areas to ensure that proposed operations would avoid impact to wetlands. Through an interagency agreement, the U.S. Fish and Wildlife Service completed draft National Wetland Inventory Maps for the entire park. Park staff hosted field trips for more than 120 people attending the 18th Annual Meeting of the Society of Wetland Scientists, held in Bozeman, Montana. A field-trip guide to the wetlands of the greater Yellowstone ecosystem was prepared.

Wildlife Surveys and Management. In 1997, 80 large mammals were hit and killed by vehicles within the park, the lowest number since the park began keeping records in 1989. Mule deer (25) and elk (24) were the species most often killed in accidents with vehicles. Other species of large mammals killed by vehicles included bison (14), moose (7), coyotes (5), antelope (2), wolves (2), and raccoon (1).

Three bull elk that had become entangled in an extension cord, a hammock, and a coil of thick gauge wire, respectively, were successfully immobilized and the objects removed. One subadult male red fox panhandling for human foods at the Tower Falls Hamilton Store was trapped, ear-tagged, and translocated three times. The fox returned from translocation distances of 7, 21, and 52 miles. After returning the third time, the fox nipped a woman's finger and was trapped and euthanized.

Wolf Restoration and Management. Thirteen litters were born to nine packs of wolves in 1997, all but one of which were born inside Yellowstone National Park. The Druid Peak, Rose Creek, and Chief Joseph packs had two, three, and two litters, respectively. All other packs had one litter. Exceptional reproduction was probably related to prey availability. A total of 67 pups were born. Litter sizes ranged from 4 to 11, and the average was 5.2 pups.

Thirty-two wolves died in 1997. Sixteen (50% of the total) of these deaths were pups, hence 24% of the pups born in 1997 died. All but one of these pup mortalities were due to natural causes; one pup from the Chief Joseph Pack was hit on Highway 191 in September. Among adult and yearling wolves, five (17%) wolves were killed by Wildlife Services personnel because of livestock depredations, three (9%) were illegally shot, three (9%) died of natural causes (old age and intraspecific strife), two (7%) were legally shot by ranchers because the wolves were seen in the act of killing livestock, two (7%) were hit by vehicles, and one (3%) was killed in a trap set for coyotes.

During 1997, wolf project staff detected a total of 257 known and probable wolf kills. Of these, 234 (91%) were elk. Other prey killed by wolves included 8 moose, 6 mule deer, 2 bison, 1 beaver, and 6 unidentified prey. In March 1997 and November and December 1997, staff intensively monitored wolf packs to estimate several wolf predation parameters, including wolf kill rates. Wolf kill rates were highly variable by season, ranging 1 to 8 days between kills, but because of the extremely hard winter of 1996-1997, were very high during the late-winter study period, especially for northern range packs. Work thus far suggests a lower kill rate for wolf packs that reside outside the northern range.

The year began with 12 wolves (adults #29 and #37 from the Nez Perce pack and ten Sawtooth pups brought to Yellowstone in 1996 from northern Montana) in captivity. Two other wolves, Nez Perce female #27 and her female pup #48, were captured in the northern GYA in early 1997. All of these wolves were released from the Nez Perce pen in early summer in hopes that a cohesive pack would form. That did not happen, the wolves often traveled alone, and most of these wolves were subsequently involved in livestock depredations that resulted in control actions.

There were six wolf-livestock incidents in the GYA during 1997, and one outside of the recovery area involving a GYA wolf that had dispersed. In total wolves killed 68 sheep and 6 cattle in the ecosystem in 1997. Five of these incidents were exclusively attributed to or involved Sawtooth/Nez Perce yearlings.

At the end of 1997, seven breeding packs consisting of 62 wolves existed within the GYA. An eighth group, the Washakie pack, was not considered a breeding unit because the alpha male was shot in a control action in the autumn. In total, about 85 wolves inhabited the GYA; 23 wolves were either in packs without both adults, were loners, or their whereabouts and status were unknown. On December 12, U.S. District Court Judge William Downes found that the wolf reintroduction program in Yellowstone and central Idaho violated the intent of section 10(j) of the Endangered Species Act because of the lack of geographic separation between fully protected wolves already existing in Montana and the reintroduction areas in which special rules for wolf management apply. He ordered the removal of reintroduced wolves and their offspring from the Yellowstone and central Idaho experimental population areas, but immediately stayed his order pending an expected appeal, which had not been filed by the Justice Department as of the end of the year. Until a final court order is issued, wolves were to be protected and managed just as they had been since the reintroduction began.

OTHER ACTIVITIES

Bioprospecting. On August 17, 1997, Yellowstone signed the first "bioprospecting" arrangement with Diversa Corporation, a company specializing in the industrial application of biocatalysts which is headquartered in San Diego, California. Scientific interest in the park's hot spring microbes has increased steadily since development of DNA fingerprinting technology in the late 1980s involving a microorganism called *Thermus aquaticus*. Revenues in excess of several hundred million dollars have been generated from the use of that technology, none of which has benefitted Yellowstone National Park. The new agreement intended to change that, allowing Diversa Corporation to conduct research on microorganisms sampled at Yellowstone while pledging a portion of the company's future profits from such research for conservation and the park's related scientific and public education activities. The agreement was reached with the assistance of World Foundation for Environment and Development (WFED), an independent nongovernmental organization established to facilitate negotiations in the field of environment and development. At the end of the year the

pioneering agreement was being reviewed by solicitors and senior managers in the Washington Office of the NPS.

At a special workshop on "Biodiversity and Bioprospecting in the National Parks: The Yellowstone Experience," held October 15, 1997, panelists from the park, WFED, and conservation organizations discussed related legal, philosophical, and management issues with a University of Utah law professor and a representative of the American Type Culture Collection, repository for microbiological samples taken from Yellowstone and elsewhere.

Park Planning. Under the direction of John Sacklin, planning and compliance staff worked on numerous projects, especially those related to road reconstruction, commercial services, and winter use management. In February 1997, the Branch of Planning and Compliance began an organizational transition, moving from the Center for Resources to the Superintendent's Office. Although their budget was carried on the books throughout the fiscal year, their activities for 1997 are reported with other activities of the Superintendent's Office.

Research Coordination. During 1997, 280 active research projects were managed or facilitated by the YCR, and 89 were newly authorized to conduct research in the Yellowstone ecosystem. Independent research projects conducted in YNP in 1997 were valued at \$5,203,241. Researchers were provided with logistical assistance when possible (i.e., dorm space, and vehicles) and given information about park regulations and policies. Bob Lindstrom continued to request and compile an annual Investigators' Annual Report with submissions from all permitted researchers in the park.

Spatial Analysis. Ann Rodman, Eric Compas, and others from the Spatial Analysis Center (SAC) provided information and support for park projects including an *Avalanche Management Plan*, *The Yellowstone Paleontology Survey*, bison planning, the wolf project, a road-killed wildlife analysis, a study of building history in Mammoth, inventory and monitoring of thermal areas, exotic vegetation surveys, and parkwide road reconstruction. Assistance was also provided to support several researchers' projects, Yellowstone Foundation programs, the Northern Range Cooperative Wildlife Working Group, and an Earth Day presentation in Gardiner.

Several copies of a user-friendly GIS package, ArcView, were purchased and made available to personnel in the GIS lab, the Wolf Project Office, and the Planning Office. In the interior, copies were installed on computers at Old Faithful, Canyon, and Lake. With some training and a little personal initiative, motivated staff can now make maps, query data, and even create their own data on their personal computers.

SAC devoted time to thoroughly documenting existing GIS data sets (termed *metadata*), for which there is an official national standard. Metadata increases use of data sets by helping people understand how the data set was created and the level of error inherent in data. To create a well-integrated database with the capacity to handle the huge amount of diverse and complex information gathered about the park in the last 125 years, major

progress was also made to identify other existing data sets (including non-GIS data sets), describe them (including where and how to get them), and enter that information into a searchable database called the Dataset Catalog. More than 150 data sets from subject areas such as aquatic ecology, archeology, entomology, fire, geothermal systems, history, herpetology, mammalogy, ornithology, paleontology, soil science, water quality, and wildlife management were catalogued in 1997.

Through a national Department of Interior program focusing on the Yellowstone ecosystem, the park received data from a variety of federal agencies, including the USGS and Department of Defense, at very little cost to Yellowstone. The park now has 1:24,000-, 1:62,500-, 1:100,000-, 1:125,000-, and 1:250,000-scale scanned USGS topographic maps (Digital Raster Graphics or DRGs) for the park and most of the ecosystem. SAC staff distributed more than 20 CD-ROMs containing all the 1:24,000-scale (7.5-minute) maps for the park to park staff from all divisions. Significant progress was made toward processing black-and-white images of geo-referenced aerial photographs into digital, orthorectified quadrangles. Yellowstone is now one of the few places in the country to have Digital Elevation Models at 10-meter grid spacing; these models form the base for most spatial analysis by providing many topographic characteristics such as elevation, slope, and aspect. They also will allow us to create detailed 3D models of the surface and surface phenomena. Yellowstone also received a complete hydrography layer (including all streams, rivers, ponds, marshes, and human-created water features) for the park at a 1:24,000 scale.

Hyper-spectral instruments, a new, experimental method of remote sensing that records 300 narrow bands of spectral data at 17-meter ground resolution, have been flown over Yellowstone twice in 1996 and 1997 to create spatial data sets. USGS scientists have used the data to detect and differentiate forest cover types, plant species, mineralogy, and thermal algae types. Testing is in progress, but preliminary results indicate that individual tree species can be discerned. This technology may provide the next generation of a park vegetation layer along with maps of thermal area mineralogy and biota. The park was also involved in a pilot program in cooperation with the Department of Defense to use high-tech defense imagery in a natural resource setting. The data and much of the work is classified, but products, when available, will increase the available knowledge about the location of exotics away from roads, the extent of thermal resources, and thermophile habitats.

Resource Information. The quarterly magazine *Yellowstone Science*, in its fifth year of publication, featured articles on varied natural and cultural resources. Donations continued to support approximately 25 percent of the printing costs, the rest of which were paid by a grant from the Yellowstone Association. Other publications produced included a 150-page book on *Yellowstone's Northern Range: Complexity and Change in a Wildland Ecosystem*, and reports on a parkwide beaver survey, geothermal resources, a geologic bibliography, and the *Yellowstone Wolf Project, 1995-1996*. An annual report for the YCR's activities in calendar year 1996 was produced and distributed, along with five issues of the park's resource newsletter, *The Buffalo Chip*. External assistance was

provided to the U.S. Fish and Wildlife Service and the Interagency Grizzly Bear Interpretation and Education Subcommittee to produce a special supplement for regional newspapers on *Grizzly Bears: On the Road to Recovery in the Greater Yellowstone Ecosystem*. Staff from YCR provided much of the writing and editing, while Interpretation Division staff did the design and layout of the insert. The park also contributed \$1,500 toward printing of the insert. At the request of the superintendent, the resource information staff began work on a major document, expected to be released in 1998, entitled *The State of the Park*.

Various staff specialists presented dozens of seminars, training sessions, talks, and field trips to visiting students, organizations, other agency personnel, and Yellowstone staff throughout the year. Bison, wolf restoration, the northern range, fisheries, exotic plants, grizzly bears, and geothermal resources were of high interest, but other topics were also addressed. Several division staff also had a major role in assisting *The Jason Project*, a two-week on-site filming adventure for television featuring Yellowstone-Iceland connections and thermal activity.

Resource information staff assisted in planning and conducting the Fourth Biennial Scientific Conference on the Greater Yellowstone Ecosystem on *People and Place: The Human Experience in Greater Yellowstone*, held October 12-15, 1997 in Mammoth Hot Springs. The conference series aims to promote the spread of research information between scientists, managers, and interested publics. More than 225 persons attended the conference.

**SUPERINTENDENT'S
ANNUAL REPORT
1998**

**SUPERINTENDENT'S
ANNUAL REPORT
1998**

Administration

Budget Overview

Finally responding to several years of effectively flat budgets, Congress and the Administration increased Yellowstone's base budget by a relatively healthy \$2,321,000 (11.5%). Approximately \$500,000 of this increase was spent on a legislated 2.9% increase in employee salaries, \$150,000 on inflationary increases in other fixed costs, and \$63,000 went to pay the increased retirement costs for new employees in the FERS retirement system that replaced employees in the CSRS system. Yellowstone also spent \$40,000 to comply with a winter use lawsuit.

Of the remaining \$1.568 million, \$1.1 million was used to replace fee demonstration funds that were used last year for operations and \$200,000 was allocated to parkwide safety projects. The remaining \$268,000 was used to partially restore operations that were cut in preceding years.

FY 1998 also saw changes in fee demonstration legislation, a congressionally authorized program permitting park units to keep a portion of the revenue that they generate. While park fees (except commercial bus tours) remained the same as in '97, Yellowstone collected \$7.6 million in entrance/user fees in this fiscal year. Increased revenues and the changes in legislation together resulted in an additional \$2 million (to a total of \$5.4 million) in fee revenues used by the park. \$1.5 million was used to cover the costs of the fee collection operation: \$2 million was allocated projects this fiscal year and the remainder allocated to future projects to reduce the backlog of infrastructure related projects.

The table below displays the funding available to Yellowstone during Fiscal 1998:

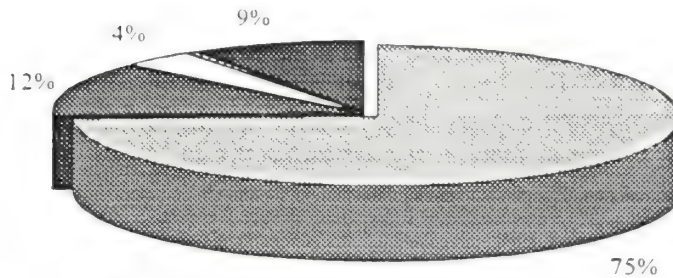
Federal Sources of Funds

Uses of Funds

<i>Recurring</i>	O&M	Capital	Total
Yellowstone Base Budget	\$22,421,000		\$22,421,000
Cost Recovery/Special Use Fees	\$		\$
	3,735,000		3,735,000
Subtotal			\$26,156,000
	\$26,156,000		
Non Recurring			
One Time ONPS Projects	\$	\$	\$
	1,160,900	985,900	2,146,800
Private Donations	\$ 150,000	\$	\$
		60,000	210,000
Fee Demonstration Program	\$	\$	\$
	2,762,000	708,000	3,470,000
Construction	\$ 580,000	\$	\$
		2,447,000	3,027,000
Federal Highways Program		\$	\$
		977,600	977,600
Subtotal	\$	\$	\$
	4,652,900	5,178,500	9,831,400
Total	\$30,808,900	\$	\$35,987,400
		5,178,500	

As depicted in the table below, 25% of the funding used for recurring Operations and Maintenance were from fund sources other than Congressionally appropriated base dollars.

Sources of Funding for Yellowstone FY '98 Operations



- Yellowstone Base Budget
- Cost Recovery/Special Use Fees
- One Time ONPS Projects
- Private Donations
- Fee Demonstration Program

While cost recovery programs are secure (if the revenue is not generated no work is performed), programs funded from remaining funding sources are in jeopardy if these funding sources disappear. As a result park managers continued to place a great deal of their financial management resources obtaining non-base sources of funding. These managers successfully secured funds from a variety of Regional and Servicewide programs, as depicted in the table below:

Program	1998
Cyclic Repair/Rehab	667,100
Repair/Rehabilitation	815,000
Hazardous Waste	174,600
NRPP	155,500
CRPP	163,300
Water Resources	24,000
Collections Management	78,800
Volunteers in Parks	10,500
Air Quality	11,000
Public Health	27,500
Drug Program	2,000
Other	17,500
Total	2,146,800

Administration

To improve efficiency of the division while operating under flat budgets the division underwent a reorganization and distribution of workload analysis during 1996 and 1997. Most of the recommendations had been fully implemented during 1998, with the exception of clerical support for the Administrative Officer, resulting in improved customer service and work output. Clerical support for the Administrative Officer and the Division was provided by the Administrative Support Assistant and several Administrative Support Clerks within the division.

The division budget for FY 98 was:

ONPS	\$2,482,700
VIP	<u>10,500</u>
	\$2,493,200

Personnel

1998 saw the full range of personnel activities in the Yellowstone National Park Personnel Office. The Federal Payroll Personnel System (FPPS), the new system by which all personnel actions are entered, was fully implemented. The Office of Personnel Management (OPM) conducted an audit of our Delegated Examining Unit authority, and a park personnel action was appealed to an MSPB hearing.

Over the course of the calendar year the Personnel Office received 2,120 employment applications. This was in addition to the 526 applications received for seasonal ranger positions through the WASO seasonal hiring unit. Personnel staff issued 87 vacancy announcements and recruit bulletins, and 127 Certificates of Eligibles. The park's status as a Delegated Examining Unit (DEU) was audited by a team of two staff from OPM in Dallas, and found to be satisfactory. Vanessa Ford and Maribeth Wuertz in turn conducted a routine audit of the Grand Teton DEU, which will now become a yearly event. Vanessa Ford and Maribeth Wuertz both planned recruit trips to areas where diversity students could be targeted. Vanessa spent a week in the Bay Area recruiting at three different schools. Maribeth spent a week in the Denver area doing the same. These activities helped bolster our diversity hires for the summer of 1998 by 150% over 1997.

26 positions were audited, classified or reclassified within Yellowstone this year. Since the Superintendent has a freeze on upgrades through accretion of duties, not all positions audited could necessarily be reclassified.

The Personnel Office sponsored three classes, which were for the benefit of the whole park: Supervisory Excellence, a class on transferring to the Federal Employees Retirement System (FERS), and Employee Relations. In addition, a number of employees in the Personnel Office took classes. Joanne Timmins took a class on 6c Special Retirement. Vanessa Ford and Maribeth Wuertz went to OPM's national conference, Solutions. Brenda Tupek took query training. Sue Crowfoot and Rosanne

Riley took a class on OWCP. Rosanne also took a safety class. Patty Oestreich and Ginny Brock took Seven Habits of highly Effective People. Ginny also took a correspondence course on Personnel Procedures for Clerks and Assistants. Vanessa, Maribeth, Andy Ludwig and Brenda took a three-day class given at the park by which they became certified or recertified on the Delegated Examining Unit authority.

Three Yellowstone employees retired in 1998. Another 18 asked for retirement estimates. Sue and Rosanne handled a total of 117 new OWCP cases. Rosanne processed the paperwork for one death in service. Three CSRS employees took advantage of the unique opportunity offered through the end of 1998 to transfer to FERS. The park took it upon itself to identify employees affected by the decision in the case of Conner v. OPM. During 1998 Rosanne identified a potential number of 225 employees possibly affected by the case. This project continues into 1999.

Patty continued to administer the drug testing program. A potential of 147 employees were subject to drug testing. After random selection was administered, a total of 88 were actually tested. There were a total of 14 incidents among the permanent and seasonal staff that warranted some sort of disciplinary action. These ranged from oral counseling to a five-day suspension.

In January, a former Yellowstone employee who was dismissed for cause, was granted an MSPB hearing in Billings. In July the judge issued a decision in the agency's favor.

In February the Chief Ranger was downgraded from a GM-14 to a GS-13 and transferred to Big Cypress National Monument. He appealed to MSPB and the hearing was held in June in Billings, MT. In December the judge issued an initial decision in the agency's favor. This is currently on appeal.

During 1998, a former employee, Ken Carver, continued his civil suit against the park. Depositions were taken in May and June. In late June, the Federal Judge in the District Court in which Mr. Carver brought his suit dismissed the case. Mr. Carver has appealed.

In November an employee from another park was granted an EEOC hearing on a matter upon which she filed a complaint in 1995. The judge ruled from the bench in the agency's favor.

Financial Services

Fiscal year 1998 saw many changes in the Financial Services Office. In March, Tom Huntington, Supervisory Cash Clerk, transferred to Sleeping Bear Dunes, leaving his position vacant for the remainder of the fiscal year. Lindsay Robb was reassigned to a newly created Fee Financial Systems Specialist position created to develop and monitor systems for tracking funds in the new Fee Demonstration Program. The month of May saw Robert Lindstrom join the staff as Budget Assistant, the counterpart to Montana Lindstrom's position. Kris Kruse came onboard in a term position as the Cash & Debt Management clerk.

Many staff members enhanced their customer service and office skills with training. Bob attended training in the Microsoft Office series, including Word, Excel and Access and

has put this to use with an Excel application to minimize his workload. Montana attended Permanent Change of Station training and is Yellowstone's guru helping transferred and transferring employees with these complicated regulations. Kris received COTR training and is now the Contracting Officer's technical representative on our armored car contract. Also, as a new employee, Kris attended Orientation to the National Park Service. Kathy attended Employee Relations training, as well as Supervisory Excellence.

Don Striker had another busy year on national initiatives, and he spent more than seven weeks on the road participating in Fee Demonstration Program improvement conferences and coordinating a national business planning initiative. Striker also worked with the park's management team to develop a new process for distributing base dollars. This system, which essentially performs a "zero base" distribution each year, was designed to show senior managers how much of their budget is fixed in any given year. Financial services staff plan to refine and integrate this system with the parks position management planning process so that the management team can assess the financial impact of proposed staffing changes.

Financial services staff trained division personnel in the use of the Federal Financial System (FFS), including the inputting and modifying of documents, use of the CDTT and OARC tables, and in the use of Document Direct to access financial reports. While delegating these financial management functions to operating division staff represented a major shift in the way business is conducted at Yellowstone, it resulted in greater efficiency and a better-trained financial management staff throughout the park.

Financial Services staff continued to coordinate with division budget personnel in the establishment and monitoring of over 600 accounts in twelve primary funding sources.

Workload statistics for the Financial Services Office included:

- 1535 Travel Vouchers processed
- 791 Vendor Invoices paid
- 2365 Third Party Drafts issued
- 663 Bills of Collection issued,
- 433 Official Receipts collected, and
- 486 Deposits processed for over \$10,580,000.

Computer Support Services

Computer Support Services (CSS) filled an intake position with Jose Santiago Jr, and a seasonal Help Desk person with Rick Gordon.

In addition to supporting hardware, software and users for approximately 400+ computers, a Local and Wide Area Network and multiple CCMail postoffices, CSS did the following:

The CSS Team continues to bring Yellowstone National Park into the 21st Century. With the exception of just a few buildings in Mammoth, all users have been given access to the Yellowstone National Park Intranet and also the Internet as well as NT Servers, GIS and common databases. All areas of the Interior have dialup access to the Intranet/Internet as well as CCMail. We also installed a 4500 series router to better meet the needs of Yellowstone National Park in the future. This added capability allows us to hook many interior areas directly to our network in the 1999.

At the end of last fiscal year over 100 pieces of computing equipment was purchased that needed to be prepped and installed. This caused a flurry of activity at the beginning of the year. Not only did this equipment need to be installed, but also it caused a cascading equipment move. Whenever we would install a new computer, it would necessitate the movement of the older piece to another person's desk as well as changing of logins, software and data.

They implemented NT login security, giving our Local Area Network more secure access and personal space on the NT Server for archiving of data. This also allowed more secure access to different programs such as supplies Atrex and AFSII across the network.

They implemented a new strategy for upgrades, we are now using the Intranet to allow access to self-extracting files for new software upgrades. This saves the use of multiple disks as well as travel time to computers as we can now help a user do the upgrade themselves over the phone while hooked to the Intranet.

CSS continued to give user support and training related functions for the use of the new computer Office 97 software and CCMail. We gave two different two-week courses on Office 97 and a special set of courses on CCMail archiving. CSS also instructed, advised and converted many large databases, critical documents and spreadsheets to the new Office 97 software standard.

Another milestone for CSS is the removal of the Datapoint computer and associated software. Finance's billing program was reprogrammed in Visual Basic and supply was converted to an off the shelf inventory program allowing CSS to remove the Datapoint and the associated arcnet network.

CSS transferred the Internet responsibilities to Tom Cawley in the Interpretation division. CSS continues to be instrumental in the Yellowstone National Park Intranet. They upgraded the Internet Information Server as well as implemented searching capabilities for documents available. CSS has been working with each division to promote and utilize the web functions for distribution of data. CSS has also implemented an online database of Yellowstone National Park phone numbers.

Utilizing the Executive Order 12999 and the Stevenson Wydler Act, CSS has donated excess computers and peripherals to several Gateway communities thus promoting community goodwill.

CSS also began the process of inventorying, accessing and making recommendations to make Yellowstone National Park year 2000 compliant. This includes running software to check computers, software and data, as well as visiting water and sewage treatment plants, checking all embedded chip devices and interviewing a myriad of people.

Telecommunications

Nine full-time employees performed the work functions required to serve the park's telecommunications needs in 1998. Their responsibilities included installation and maintenance activities associated with, 1) a radio system that supported the use of more than 1200 portable and mobile radios, 2) 160 alarm systems located in buildings throughout the park, 3) a park-owned Definity private branch exchange (PBX) equipped with 500 lines to serve telephone needs at Mammoth, Norris, Madison and Tower areas, and, 4) computer/telemetry systems associated with park-owned gas pumps and water treatment plants. In addition, staff employees provide parkwide audio/visual support and maintain all electronic systems associated with the 24 hours/day Communications Center located at Mammoth. No personnel actions or changes were made in 1998.

Telecommunications staff worked during the winter months to complete the Office Renovation Project. Work completed during the project has enabled shop employees to set up a professional, businesslike atmosphere in the front office, and the increased floor space has been instrumental in improving shop operational efficiency.

The Telecommunication's audio/visual division upgraded portable sound systems for use with wireless microphones and made numerous repairs to audio/visual equipment in amphitheaters located throughout the park. In addition to its day-to-day responsibilities, the audio/visual division provided sound and video system support for the All Employees meetings and several major conferences and activities.

The alarm systems division installed telemetry alarm systems in the Old Faithful and Grant water treatment plants and provided on-going technical support to AmFac during 1998. Because existing hardware and software programs for the alarm receiving systems located in the Communications Center had become obsolete and Y2K incompatible, shop employees are in the process of replacing the affected portions of those systems during the Communications Center Renovation Project.

During 1998, shop technicians began work on the initial stages of the long-term Yellowstone Park Radio Renovation Project. A new radio system is required to comply with new narrow banding requirements outlined by the National Telecommunications and Information Administration (NTIA). The project will enable the park to make the transition from the existing analog system to a digital, narrow-band, radio system by the year 2005. Shop employees completed a radio frequency proposal for authorizations by the NTIA, and site surveys and coverage path tests were made at Old Faithful, Grant Village, Cooke Pass, Sawtell Peak (in Idaho), and Lone Peak at Big Sky, Montana. Through a cooperative agreement with Big Sky Resorts and the Montana Highway

Patrol, the park has been authorized to install a radio repeater site on Loan Peak, expanding vital radio coverage on Highway 191.

Shop employees installed a 128K circuit to provide NPS computer users with direct Internet access. They also continued to replace outdated telephone/computer wiring with Category 5 wire--the highest speed data transmission wire medium available for indoor applications. The following NPS offices and buildings wired with Category 5 wire during 1998: the Fiscal, Bear Management, Cultural Resources, Yellowstone Center for Resources (more than 70,000 feet of category 5 wire and 4,000 feet of fiber optic cable was installed); a residential building at Lamar, a residential building at Stephens Creek, the Fishing Bridge Museum and Offices, and the Grant Backcountry Office. Shop employees also wired the Gardiner Forest Service building, the Yellowstone School, the Yellowstone Association (Chittenden House), and the Yellowstone Foundation Offices in Bozeman, Montana.

A Pair Gain-32 telephone Subscriber Line Carrier (SLC) system was installed to bypass U S West and provide park-owned telephone service to the Mammoth Garage.

During 1998, the park noted many changes to the cellular phone business with the permitting of two new vendors: Western Wireless in the southern portion of the park and Comm Net Cellular in the northern half. The Telecommunications Office worked with the NPS Washington Telecommunications Office to write the regulations for the right-of-way permit process. Telecommunications staff performed all administrative and permit issuance functions associated with all cellular telephone services in Yellowstone National Park.

Staff audited and approved telephone bills averaging more than \$30,000 a month during 1998. In addition, they monitored call traffic patterns and administered the park's voice mail system. The park-owned Definity PBX was upgraded to include Call Accounting System (CAS) and an Intuity Audix Voice Mail system. The CAS generates telephone traffic reports to assist staff in determining equipment needs and decrease the number call blockage incidents. The Audix Voice Mail system provides electronic voice mail boxes for up to 500 users and a state-of-the-art call director system, replacing the previous, antiquated CINDI call director system.

Telecommunications continued with Phase 3 of the Upper Mammoth Cable Project to connect the buildings in the vicinity of the Administration Building with fiber optic and copper telephone cable. Local Area Networks (LAN) built during 1996 through 1998 has enabled the NPS to avert significant telecommunications installation charges. This became obvious during the YCR move. If the NPS had ordered the 50 additional cable pairs needed for the move from U S West, it would have cost the park a one-time fee of \$25,000 to connect the required cable pair and an additional monthly lease fee of \$36 for each of the 50 cable pairs--or a total increase of \$1,800 (50 x \$36) per month to the park's monthly telephone bill. The monthly telephone bill would increase by about \$9000/month if U S West provided the same services that have been transferred over to the new, Mammoth park-owned LAN infrastructure.

Contracting and Property Mgt.

There were 4 classes offered on the use of purchase cards. There were about 62 cards issued to park employees by the end of FY1998. IMPAC cards are being used extensively by the procurement and supply center personnel. The integrated card system has been implemented and card use has expanded.

The position of Procurement Clerk was filled by Holli Traucht.

Two positions were redescribed . One was the WG-5 Materials Handler was redescribed as the Property Management Technician GS-1101-07 and Property Utilization Specialist as the Supervisory General Supply Specialist GS-2001-10. Both positions were filled by the incumbents.

Contracting/Procurement

Over 6900 requisitions were processed totaling approximately \$11 million as follows:

31 contract actions reported on SF-279s (Two contracts for \$1,826,705 were awarded to minority owned small businesses)

7 new awards	
3 supply contracts	\$ 278,116
4 construction	\$2,326,949
11 Contract Modification	\$ 244,687
12 Task Orders	\$ 489,676
	<hr/>
	\$3,339,428

One contract had to be Terminated for Default due to failure of the contractor to perform. The contract was then awarded to the next low bidder.

Agreements:

8 Interagency Agreements	\$ 188,282.83
1 Cooperative Agreement	\$ 19,000.00
42 Mods & Work Orders	<u>\$1,550,874.19</u>
	\$1,758,157.02

Small Purchases:

Type	Quantity	Dollar Amount
Purchase orders	680	\$3,739,342.27
Blanket Purchase Orders	37	389,907.82
Third Party Drafts	569	268,166.71
Imprest Fund	1	103.77
GSA Advantage/Muffin	276	161,502.50
IMPAC - VISA	<u>3165</u>	<u>1,299,789.41</u>
		\$5,858,812.48

Supply Center Activities

Total Sales high cost sales \$217,377.26

The supply operation recycled 124 bales of corrugated cardboard, totaling 21,514 pounds. Cardboard recycling continues to increase every year.

Office Services

Office Services continued to be staffed with one permanent employee, two seasonal employees who "job shared" covering a vacant permanent position, and one summer seasonal employee.

The volume of mail handled continued to grow. In 1998 the staff processed 94,493 pieces of outgoing mail for the park. With the cooperation of the Communications Center they implemented a new method of mailing out information packets to take advantage of the bulk mailing system to reduce postage costs. The staff sent out 11,063 packets by bulk mail for a savings to the government of \$2,699.37 in postage costs and a savings of \$6,084.65 to the park's postage budget. An additional 22,450 pieces of mail were sent out using presorted, automation methods for a savings of \$4,638.52 to the government and reducing the cost to the postage budget by \$9,381.54. The staff is very conscientious and continually strives to do business in the most cost-effective and efficient manner. The staff also logged 1816 pieces of outgoing correspondence into their files database and physically filed copies in central files along with other incoming items.

All three of the staff attended training on NPS-19 and filing, and also took advantage of the computer training sessions offered in the park. Judy Jensen attended supervisory excellence and 7-habits classes.

Judy requested funds to replace old, worn-out copiers and received additional funding as well to provide copy machines for areas in the interior of the park that did not have access to them. One of the old copiers was replaced with a new digital machine that was networked and provides capabilities of scanning and printing directly from personal computers as well as printing directly from disks. Four smaller digital copiers were purchased and provided to offices at Grant Village, Lake, Old Faithful, and the third floor of the Administration Building. The staff provided training, assistance, and supplies for 16 copy machines located throughout the park. They provided copying services for park employees of nearly 2 million copies during the year.

Concessions

Staffing:

Chief, Concessions Management, GS-1101-14/4, Edna Good
 Asst. Chief, Concessions Management, GS-1101-12/6 Judy Churchwell
 Concessions Specialist (Accounts/projects), GS-1101-11/6, Mary Murphy
 Concessions Specialist (Evaluation/pricing), GS-1101-9/5, Barb Riley
 Concessions Specialist (Evaluation/pricing), GS-1101-11/4, Doug Lentz
 Sanitarian, GS-0688-11/4, Sara Roser (STF)
 Concessions Mgt. Assistant, GS-1101-6/5, Patty Kremer (STF)
 Concessions Mgt. Assistant, GS-1101-5/5, Debby Young
 Civil Engineer, GS-0830-9/1, Mary Hudson, (temporary, part-time)

Budget:

ONPS: \$435,190
 USPH: 27,500
 \$462,690

Concessions Management:

In 1998, gross revenues earned by Yellowstone concessioners managed by the division totaled \$78,794,514.

The division provided administrative oversight, identified and prioritized projects, and audited capital accounts amounting to over \$9,786,000. In addition, government-owned property and equipment assigned to the concessioners (valued at \$5.8 million) were managed according to federal regulations.

Approximately 275 formal and informal inspections were conducted in guest and employee facilities in the park. U. S. Public health inspections were conducted at all food service facilities, water/sewer systems, shower facilities, hot tubs, etc., to ensure compliance with USPHS standards. Rates for all services and activities were approved according to Servicewide guidelines.

In 1998, annual overall ratings of satisfactory were earned by all concessioners with the exception of Ace Snowmobile Rentals and Backcountry Adventure Snowmobile Rental. Both these concessioners were rated as marginal because of failure to submit franchise fee payments by the date due. Amfac Parks and Resorts received an overall satisfactory rating, but was rated marginal on operations. This poor rating was the result of deteriorated standards in maintenance and housekeeping, as well as poor compliance with Public Health standards.

Orientation programs were presented to approximately 3,000 seasonal concessioner employees during the period from April through June. A uniformed representative of the

division presented NPS philosophy, mission, regulations, safety and requirements pertinent to living and working in Yellowstone.

Work on the Commercial Services Plan continued, with development of a range of alternatives to be considered. The plan will be used to establish guidelines and parameters for future contracting actions in Yellowstone. An environmental impact statement will be required. It is anticipated that the plan will be finished by the winter of 1999.

Various staff continued to participate on Servicewide task forces that continue to develop new management policies, director's orders, and work manuals. At a Servicewide conference in Atlanta in November, Judy Churchwell, Mary Murphy, and Edna Good were all recognized with monetary awards for their extra work. Mary Hudson and Sara Roser both received awards for their work with Old Faithful Snowlodge design and construction review. Judy Churchwell and Mary Murphy received Quality Step Increases for their continued outstanding performances. Their position descriptions are awaiting reclassification. All staff was able to attend a concession contracting class in Salt Lake City, UT. By year end, Doug Lentz had accepted a transfer to Hawaii Volcanoes National Park.

Amfac Parks and Resorts (AMFAC)

Major undertakings included the completion of construction of the Dunraven Lodge (44 rooms) and the boiler system at Canyon Village. These were funded by corporate capital as part of an amendment to the contract, which authorized Amfac to operate four of the NPS campgrounds. In addition, Phase I of the Old Faithful Snow Lodge was substantially complete and was occupied in July 1998. Phase I included 52 guest rooms, a dining room, lounge, employee dining room, sundry shop, and large public space/lobby area. One of the most satisfying aspects of the progress on the new Snow Lodge was the ability to destroy the old Snow Lodge. It was demolished and removed from the park in April. Construction of Phase II began in April and is anticipated to be complete by May, 1999.

Other major projects completed or in progress included:

24 guest cabins at Old Faithful Lodge were remodeled

Construction and upgrade of the water distribution system at Roosevelt Lodge

Mammoth Hotel Dining Room repairs, including replacement of deteriorated front steps; repair work on foundation, replacement of a portion of the roof; exterior work which included adding an ADA entrance to the employee dining room, stucco repair and paint. A new loading dock was also constructed.

Interior and exterior improvement work on several employee dormitories

33 guest rooms in the Old Faithful Inn are currently being remodeled

Preservation maintenance and ADA improvements parkwide

Hamilton Stores, Inc. (HSI)

Hamilton Stores, Inc.'s contract expires on September 30, 1999. The National Park Service began preliminary work on the prospectus for renewal. In addition, a site visit

was offered to interested parties. Although only Amfac and Yellowstone Association representatives attended the site visit, we received considerable interest from other parties who could not come at that time. The Concession Program Center initiated an appraisal of concessionaire buildings to determine sound value possessory interest. The appraisal work was funded by Regional contingency funds.

Demolition of the old Snow Lodge and construction of the new lodge had significant impacts on HSI operations at Old Faithful. The project did allow us to bury the propane tank farm behind the Upper gas station, and to rebuild the porch, walks, and ADA access to the Upper Store. A service entrance/parking area was also built at the OF Photo Shop and landscaping and new lighting enhanced the appearance of the entire area. Hamilton's is currently designing ADA access to the Lower Store at Old Faithful.

Yellowstone Park Service Stations (YPSS)

The Joint Venture agreement under which the stations are managed expires on September 30, 1999. As with Hamilton Stores, initial work on a prospectus has begun, a site visit conducted, and an appraisal initiated. All underground storage tanks were brought into compliance with the new EPA regulations, with the replacement of tanks at the Fishing Bridge gas station in late September.

Renovation of rest rooms at the lower gas station at Old Faithful to ADA standards is underway, and a new diesel tow truck has been purchased.

Yellowstone Park Medical Services (YPMS)

Late fall, 1998 was the prescribed time in which a franchise fee reconsideration was initiated. Several productive meetings were held with the concessionaire; the Concession Program Center CPA worked with the park to review their financial profitability. It became clear that YPMS has consistently made errors in their annual financial reports that misrepresent their financial position. From all indications, YPMS is losing more on this operation than we had recognized. At the same time, they have had a new administrator and a new controller. We have asked that the last three years of financial reports be resubmitted with corrections made. We extended the reconsideration period to allow for an analysis of this new financial information.

1998 Funding and Staff

Recurring Funds

Yellowstone National Park Base Budget	\$ 435,190
Cost Recovery/Special Use Fees	

Non-recurring Funds

One-time Projects (Public Health Service)	<u>27,500</u>
---	---------------

Fee Demonstration Program Projects	
Capital Improvements (non-Fee Demo)	
Total	\$462,690

*Concessionaire special accounts:

Amfac Capital Improvement Funds:	\$4,763,745
Amfac Cyclic Maintenance Funds:	4,495,978
Amfac Campgrounds	344,222
Hamilton Stores, Inc.	115,130
Yellowstone Park Medical Services	43,290 (estimate 97-98)
Winter tour operators	<u>23,635 (97-98)</u>
Total special accounts	\$9,786,000

*These funds are restricted by concession contract for use on government-owned facilities assigned to concessionaires to carry out the operations authorized by their respective contracts and is based on the CONCESSIONAIRES' VARIOUS OPERATING YEARS.

Amfac: Capital Improvement Funds = 10% of current year gross receipts
 Cyclic Maintenance Funds = 10% of prior years gross receipts
 Campgrounds = 20% of prior years gross receipts

Hamilton Stores, Inc.:

Hamilton Improvement Account = .005% of prior years gross receipts
 The above amount also includes \$1,600 building use fee

Yellowstone Park Medical Services:

Government Improvement Account= \$39,000 annually, adjusted by CPI since 1993, to maintain government-owned buildings assigned

Winter Tour Operators: Concessionaires pay 4% of current year gross receipts to be used for improvements in winter facilities

Interpretation

BUDGET

In FY98, the Division of Interpretation spent \$1,308,700 of the park's total budget. In addition to \$1,126,700 in ONPS funds and \$182,000 in fee enhancement funds, the division received fishing permit fee money (\$66,000), Parks as Classrooms funds (\$12,500), repair/rehab funds for Upper Geyser Basin Trailside Exhibits (\$25,000) and Repair/Upgrade Fishing Bridge Visitor Center Exhibits (\$25,000), cyclic funds to Replace Critical Safety/Resource Protection Waysides (\$22,100), and Federal Highways assistance funds (\$50,000). The Expedition: Yellowstone! environmental education program spent \$45,075 in reimbursement fees collected in FY98 and \$1,100 was spent in VIP funds.

During the year, the Yellowstone Association (YA) continued to play a major role in support of interpretive operations by contributing \$66,979. Included in these funds were \$30,000 for interpretive operations support, \$36,979 in direct grants for such projects as the Yellowstone Today 98 supplement, artwork for exhibits, VIP housing, and summer interns, SCAs and volunteers. In addition, YA handled \$79,885 for the division in restricted account expenditures resulting from donations and income to support Children's Environmental Education, the Yellowstone Today visitor information newspaper, Photo/Slide Collection Management, wolf interpretation, the Junior Ranger Program.

Total funds expended for Interpretation in FY 98 from all sources equaled \$1,702,339.

PERSONNEL

In FY 98, the division had 22 full-time positions (16 permanent and 6 term) utilizing 16.79 of the total 37.42 FTE. The division had 64 seasonal positions (20.63 FTE) including 55 summer, 4 winter, 1 media and planning, and 4 environmental education positions.

In addition to NPS staff, the Division of Interpretation benefited from the service of 6 volunteers and 47 other positions including 41 YA sales clerks, 2 SCAs, 1 Kodak employee and 3 student interns. These volunteers and YA employees, working directly in the various interpretive functions of the park, constituted an additional 9.31 FTE.

Two Cuyahoga Valley NRA employees transferred to the Division in 1998. Diane Chalfant entered on duty as Division Chief on June 7, the position had been unfilled since March of 1997, and Tom Cawley entered the Visual Information Specialist position (Media/Publication Branch) on August 2. Two permanent employees transferred out of the division in August of 1998. Sandy Snell-Dobert (Norris/Madison District Interpreter) took the Chief of Interpretation position at Big Cypress National Preserve and Carol

Tepper (Old Faithful) transferred to Grand Canyon National Park. Environmental Education Program Coordinator Rich Jehle (Term) accepted a permanent position at Dinosaur National Monument in April. MSU Cooperative Education student Bob Fuhrmann filled his position in an acting capacity. The recruitment process was begun for the Assistant Chief of Interpretation (Operations), the Norris/Madison District Interpreter (renamed the West District Interpreter) and the Publications Program Manager positions in 1998, but all three positions remained unfilled for the year.

PLANNING

The availability of Recreation Fee Demonstration funds allowed the park to initiate planning for the Canyon Visitor Center rehabilitation and development of interpretive exhibits on geology for the facility. In July, interpretive staff conducted an interdivisional scoping session for the project to determine proposed building functions. Harpers Ferry Center increased their commitment of Major Rehab funding for the exhibit project to \$750,000 and assigned project staff.

A Long Range Interpretive Planning effort was initiated for the park in July. Harpers Ferry Center Interpretive Planner Sam Vaughn was assigned to facilitate workshops and to prepare the plan, which will begin with an onsite visit in October.

In response to a request by the NPS Chief of Interpretation, Diane Chalfant participated in a workshop of HFC and Regional Office interpretive planners and subsequently assisted in rewriting the planning chapter of NPS-6 (Interpretation).

PERSONAL SERVICES

A focus on primary park resources/controversial issues continued to shape all aspects of interpretation in Yellowstone. As applied to personal interpretive services, these philosophical directions led to an in-depth analysis of each district's primary resources and associated compelling stories, and all formal interpretive programs addressed major identified resources, issues and themes. Additionally, staffing visitor centers, museums, and contact stations continued to be a high priority in 1998, along with conducting roving interpretation in high visitor use areas.

Restoring half-day and full-day hikes such as the Climb Through Time (Specimen Ridge), Mt. Washburn Hike and Pocket Basin Walk awaits the development of a fee interpretation program. These activities serve a small but enthusiastic and dedicated visitor audience; fee interpretation is the most viable approach to providing these activities given present and likely future budget constraints.

Because of operational funding constraints, interpretive programs were not offered after Labor Day during September in most locations. The park received nearly 30 written comments of complaint about the lack of programs in September.

Detailed visitor contact information is available in the FY 98 Annual Interpretive Program Report. Briefly, total visitor contacts tallied 2,463,369. Of these, 196,638 constituted attendance at all formal ranger-led activities or programs, roving contacts totaled 271,531, and the balance included visitor center contacts, environmental education activities, and special events.

NONPERSONAL INTERPRETIVE SERVICES

Throughout 1998, "Back to Basics" was the guiding principle in prioritizing work on nonpersonal interpretive services such as publications, wayside/trailside exhibits, visitor center/museum exhibits, audiovisual media, and advanced interpretive technologies. Conservative estimates of cumulative visitor contacts totaled over 8 million.

A series of new information/orientation exhibit panels were produced and installed at five major locations within the Old Faithful Developed Area. These included a special safety exhibit panel designed as a memorial to Andrew Hecht, who was killed when he accidentally fell into Crested Pool (Upper Geyser Basin) in 1972.

New wildlife dioramas were installed in three large exhibit units on the second floor of the Albright Visitor Center.

The successful partnership with the Buffalo Bill Historical Center continued as the popular bison exhibit at Canyon Visitor Center was displayed for its first full season. A significant increase in visitation to Canyon Visitor Center in 1998 is attributed to the new bison exhibit.

Publications produced included four issues of the park newspaper Yellowstone Today, seven self-guiding trail brochures, a special full color newspaper supplement focusing on the 10th anniversary of the Yellowstone Fires of 1988, various area guides, and specially targeted site bulletins (e.g., such controversial issues as wolf reintroduction/status and bison management). The interpreter's handbook was edited to bring consistency to the types of information presented and impose a consistent style or "voice." Efforts at a major consolidation of material began late in the year.

The park received funding from a private family foundation, through Yellowstone Association, to redesign all trail guides and provide some printing funds. The Upper Geyser Basin guide was redesigned in an updated format.

Decrepit geology exhibits were removed from the Mt. Washburn lookout and interpretive staff began developing an exhibit plan and interior finish upgrades for the site. This project will be funded in part by the Nick and Thomas Ceto family.

The Park Photographer responded to over 1,000 requests for assistance. These included support for complex exhibit and publication projects, the needs of the Personal Services interpretive staff, parkwide staff requests, and hundreds of requests from print and electronic media, authors, educational entities, and others seeking public domain

images. An in-depth inventory of the slide collection was begun, and research into storage systems and electronic management of the collection was underway.

A permanent full time webmaster was hired in August, and an entirely new, expanded and upgraded official Yellowstone website began to be developed (to be online in 1999). This involved coordination with parkwide staff and contacts with partners in the region and nationwide to address such concerns as links to appropriate sites and efficient placement and organization of content.

ENVIRONMENTAL EDUCATION

In 1998, the park's residential environmental education program for fourth through sixth graders, Expedition: Yellowstone!, entered its thirteenth year of operations and its fifth year as a fee-based program. The goal of Expedition: Yellowstone! is to teach the natural and cultural history of Yellowstone National Park, investigate current issues affecting the Greater Yellowstone Ecosystem, and promote stewardship and preservation in home communities. The cost to schools remained the same at \$16 per person per night for groups of 30 or more, and \$20 per person for groups smaller than 30. During its four months of operations, 725 students, parents and teachers participated in the three and four day programs in the Lamar Valley

The Junior Ranger program, consisting of two distinct activities by age group, continues to grow at an impressive rate. Over 14,073 children between the ages of five and twelve were served in 1998; an increase of 8.8% over 1997. The growth of this program has caused a very perceptible impact on visitor center staffs, who bear the largest workload of the program. In an effort to provide additional assistance with program implementation, and to provide a work/educational opportunity for West Yellowstone high school students, a Parks as Classrooms grant was submitted and approved for \$16,500. This will enable us to hire three West Yellowstone high school students to work with Junior Rangers in the summer of 1999.

The children's summer day camp program, Exploring Yellowstone, for children residing in Mammoth, Gardiner, Corwin Springs, Emigrant and Cooke City, grades K through seven, completed its fourth season of operations. Seventy-six children registered to attend classes. A total of 445 students participated in individual sessions. The program was once again funded through a Mammoth School grant (\$6,000) and a \$10.00 registration fee.

Over 400 students from six different area schools participate in the third Earth Day Yellowstone! educational fair which was held at the Gardiner School. Nineteen educational stations were offered. The Gardiner Student Council was involved in planning and execution of the event.

The Requested Educational Services program completed its fourth year under EE oversight. One hundred and twelve programs were presented to a diversity of groups, serving 3,353 individuals.

Environmental education staff continued their three-year partnership with the Gardiner school to lead a winter ecology program for grades 1-3 in the school and in the park in conjunction with the school's winter ski program. Preprogram and post-program materials and instruction were also provided.

Environmental Education staff continued their twice-annual involvement with Yellowstone Riverwatch, a water-quality monitoring program involving two high school science classes who are monitoring the Gardiner River at Boiling River.

Environmental Education Program Manager Ellen Petrick-Underwood continues as a board member of the Greater Yellowstone Stewardship Committee, a community group for education. She assisted with the planning of two West Yellowstone community events in October: "Fall for your Parks" and a teacher workshop on elk co-sponsored with the Rocky Mountain Elk Foundation.

Ellen Petrick-Underwood served on a team of EE leaders from across the country to perform a comprehensive review of the Teton Science School in March.

Environmental Education staff was involved with Jackson schools in yearlong, project-based learning through the arts focusing on Yellowstone and the 125th anniversary. Selected projects from the entire district were showcased at various venues throughout the park during the summer.

The Environmental Education program was successfully awarded four grants in 1998:

Parks as Classrooms: \$12,500 for development of the Requested Educational Services Program.

Exxon P.A.R.K.S.: \$10,000 for curriculum correlations to state and national standards.

Sakier Foundation: \$2,000 for continued development of Junior Ranger 5-7 program.

Yellowstone Park School: \$6,000 for Exploring Yellowstone Program.

Maintenance

The Maintenance Division's workload in 1998 focussed on the park's major infrastructure problems - roads, utility systems, buildings, and housing. Much of what was accomplished or, in many cases deferred, was driven by budget concerns which resulted in over 20 status positions being unfilled. Much of the work, outside of the barest of operations, was accomplished with "soft money" funds that could only be used for specific projects. These projects were much needed, but did not, in most cases, help the general day-to-day operations. The lack of a viable cyclic maintenance program is still increasingly evident, especially in roads. If funding does not increase the new roads that we are constructing with Federal Lands Highway Program (FLHP) funds cannot be properly maintained. Aside from stabilizing major failures, little or no preventative maintenance is occurring.

The lack of staff has put increasingly stressful burdens on the existing staff and some things that are getting accomplished are not receiving correct oversight, follow-up, or documentation. There is a tendency to take care of the problem in the short term, while the long term problems get worse and worse. The sewage system at the Norris Geyser Basin has now been shut down for four years and groundwater and surface water are being impacted by sewage in the Old Faithful area. The Old Faithful sewage plant is scheduled for replacement in 2000. The park's deteriorating infrastructure was manifested in four sewage spills that were directly attributed to a lack of grease traps and standby generators.

Yellowstone has made great strides in forming partnerships with other entities, and the Maintenance Division is no exception. The concept that started with the "Greening of Yellowstone" workshop that occurred in 1996 continued in 1998 as the division continued to work with the surrounding states and counties to work to solve problems. This was particularly evident in the air pollution work done with bio-synthetic oils, lubricants, and oxygenated fuel in conjunction with the State of Montana, the Department of Energy, and others with recycling and composting projects in southwest Montana. With these types of programs, the park has been recognized as a leader in pollution prevention and reuse of resources in the Park Service. These types of projects have brought the area and the park together and have resulted in benefits for all involved. The park began the removal of all hazardous cleaning products in 1998 and will continue that in 1999.

There was a major infrastructure initiative call for which Yellowstone submitted some 1500 projects showing a backlog, excluding roads and housing, of over \$250 million. If this funding is made available, it will help the infrastructure backlog, but it will then become imperative that a viable cyclic program be initiated.

The solid waste program continues to make strides with ongoing partnerships with the cities and counties in southwest Montana. The park is actively participating in the Headwaters Cooperative Recycling Project and is leading the way in the composting study for waste disposal in the area.

Fiscal Operations

The Maintenance Division operated from a number of fund sources as follows:

ONPS	\$ 7,758,600
ONPS No Year	1,489,600
Repair/Rehab/Cyclic	1,464,600
Day Labor (404)	99,700
Dept. of Energy (454)	78,300
Federal Lands Highway Program (day labor only-595)	425,500
School Maintenance	134,000
Housing Initiative (408)	2,295,200
Fee Demonstration	973,500
Trails Donation FY98 only	89,600
Total FTE's for FY98	214
Maintenance FTE Ceiling	218

Road Openings and Closings

April 17	-	West Entrance opened to wheeled vehicles
May 1	-	South and East Entrance opened to wheeled vehicles
May 22	-	Dunraven and Beartooth opened to wheeled vehicles
October 13	-	Dunraven and Beartooth closed to wheeled vehicles
November 2	-	All other roads closed to wheeled vehicles
December 16	-	Roads open to snowmobiles.

DISTRICT OPERATIONS

Lake

- Constructed a new lumber and storage shed next to the craft shops.
- Began construction of a winter garbage and recycle shed. This replaces an old tiny shed in the shop area.
- Built a new garage "apron" 32' by 100' concrete work surface in front of the Lake garage for Bob Evanoff's operation.
- Did all preparation work and shop yard modification so that the paving crew could pave entire shop complex?
- Made additional refinements to howitzer platform on Sylvan Pass.
- Conducted large-scale emergency land application at Fishing Bridge Wastewater treatment Plant to mitigate flood effect caused by high snowmelt induced inflow and infiltration.
- Completed repainting of the East Entrance including entrance office, kiosks, and cover canopy and frame.
- Refurbished 1/4-mile stretch of walkway pavement at Mud Volcano in cooperation with Gardiner Webb University students. The project was to enhance visitor safety and comfort.

- Installed brand new corral at Trail Creek - also in partnership with Gardiner Webb students.
- Continued progress on Lake-wide dock replacement with new docks at Trail Creek, Eagle bay, Plover Point (added a section) and Grant Village marina (fee demonstration monies).
- Designed, fabricated, and deployed all new buoy system in the Flat Mountain, South, and Southeast Arms of Yellowstone Lake for both navigation and information.

Old Faithful

- Installed five interpretive exhibit centers in the Upper Geyser Basin.
- Painted several thousand feet of Yellowstone curbing in the district.
- Made repairs at the Old Faithful/Firehole River High bridge (concrete)
- Painted area road stop bars, arrows, and pedestrian crossings.
- Installed traffic rumble strips/bars on the Grand Loop and one way roads on the employee crosswalk.
- Shouldered the overpass area.
- Ditched Isa Lake Canyon on Craig Pass.
- Cut and removed hazard trees in the Old Faithful maintenance district.
- Pressure cleaned the wastewater collection line between the Old Faithful Lodge and the Old Faithful Visitor Center.
- Replaced 55 feet of 10" Ductile Iron Water Line behind the Lower Hamilton Store and the Three Sister Thermal area.
- Cleaned the wastewater evaporation percolation ponds.
- Hauled dry sludge from the wastewater operations to the Cody, Wyoming landfill.
- Painted and/or trimmed the following buildings:
 - Utility cache #159 (trim)
 - Wastewater facility bldg. #547 (paint and trim)
 - Lodge lift station bldg. #155 (paint and trim)
 - Inn lift station bldg. #154 (paint and trim)
 - Carpenter shop bldg. #523 (paint and trim)
- OF old quad bldg. #531 (paint and trim)
- OF qtrs. #124 (paint and trim)
- OF Six-plex #496 (trim)
- OF trailer #118 mud room (trim)
- Sports and Court bldg. #163 (paint and trim)
- Visitor center entry doors bldg. 534 (paint and trim)
- Painter shed bldg. #524 (paint and trim)
- wastewater facility lift station bldg. #153 (Paint and trim)
- Installed a safety climbing cable and deck in the O.F. visitor center chimney chase for making general repairs.
- Installed a propane gas line to the Madison shop facility.
- Remodeled trailer #50 - bathroom and floor coverings
- Remodeled 258A bathroom.
- Insulated and skirted trailer 51.
- Carpeted trailer DSC75.
- Installed floor coverings in trailer #118.
- Repaired and serviced two furnaces at the Bechler Area.

- Replaced several hundred feet of boardwalk material on the geyser basin trail systems (Upper, Midway and Lower Basins.)
- Responded to several OSHA violations - made repairs and corrections to all.
- Received 185 work orders in FY98. Completed 160 or 86%. The other 25 (14%) not completed due to materials on order or not completed at this time.

Grant Village

Perhaps the greatest accomplishments for the Grant Village Maintenance Team were the successful completion of all day-today routine operations within the district. These routine operations, too numerous to list, along with the almost daily emergencies occupied approximately 90% of the workforce's time. Some of the more sufficient accomplishments are listed below.

- Replaced worn out back wash waste pump and motor in water treatment plant.
- Operated water and wastewater systems without loss of service or EPA violations.
- Began work on marina lift station to remove controls from a confined space.
- Implemented avalanche control system utilizing hand delivered explosive charges.
- Assisted special project crew with chip seal of Grand Junction to South Entrance road.
- Removed encroaching vegetation from 8 miles of road shoulders.
- Constructed 20' wide by 72' long snow shelter over residential trailer.
- Moved Canyon warming hut trailer to Grant Village to serve as the Backcountry Office.
- Installed new carpet and painted interior of eight apartments and one residential house.
- Began plans to replace foul smelling historic vault toilet at West Thumb.
- Began plans to construct recycling/winter solid waste storage building.
- Rebuilt storage area above hot tub room to provide additional storage and comply with OSHA regulations.
- Corrected several identified OSHA violations.
- Replaced two failing public dock sections with new sections.
- Replaced failing government docks and ramp with aluminum sections.
- Began plans to move boat launch ramp and docks out of bear management and flood area.
- Corrected several identified OSHA violations in marina area.

Norris

- Replaced cover on distribution box in campground - old one was rotted and a safety hazard.
- Consolidated records and plans and revamped record keeping process.
- Finished replacing old, leaking faucets and flushometers in campground and housing area. By doing this, the Norris area used approximately 400,000 gallons less water this year than in 1997.
- Built six new benches to replace old rotten ones in geyser basin.
- Rebuilt twelve picnic tables in campground.
- Did erosion work in campground - water bars, blocking of some trails, etc?

- Hazard tree survey in campground - 40 trees taken down.
- Some signs in campground replaced or repainted.
- Installed international symbol signs in geyser basin.
- Continued to put plywood backing on signs.
- Installed ICY ROAD and 8% grade signs on Blanding Hill.
- Rumble strips installed by contractor at Norris intersection.
- Virginia Cascades drive reopened - signs all redone (fee demonstration money).
- New floor put in laundry room.
- New carpet in building #112.
- Did all OSHA abatement work.

Canyon

- Timely abatement of all OSHA citations.
- Installed 4' stop signs at the Canyon intersection and relocated the stop-ahead signs.
- Crosswalk striping and rumble strips installed by contract at the Canyon intersection.
- Successfully abated the Hayden Valley chip seal road oil problem.
- Accomplished extensive pothole and grader patching on the Dunraven road
- Successfully operated the new Canyon wastewater treatment plant for a full season; met permit and learned techniques for improving future operation of the plant.
- Installed a new raw water plant at the Chittendon bridge pump station and purchased another new pump to be installed in FY99.
- A computer software program was developed to facilitate the operation and maintenance of the Canyon water and wastewater systems. This program will be offered for export to other areas of the park.
- Repaired the leaking raw water pipeline in the middle of the Grand Loop road just south of the Brink of the Upper Falls intersection.
- Repaired the broken outfall sewer line and a broken water main.
- Continued to improve the efficiency of this operation by the elimination and consolidation of 32-gallon cans.

PARKWIDE BUILDINGS AND UTILITIES

Through a variety of funding sources, (repair/rehab, cyclic, trailer replacement, fee demo) numerous building and utility projects were accomplished. These projects included:

Building 27

Finished interior of the main wing of the building.

East Entrance

Work trailers removed, cook shack moved, work on water pumphouse.
Remodeled cook shack.

Water treatment facility - disinfected and flushed well.

Wiring of water treatment facility and office

Canyon Visitor Center

Finished floor, beams and sprinkler piping painting; completed electrical, heat installation,
floor tile removal and patching, installed windows.

Tower Four-Plex

Building construction completed occupied in June.

Repaints

Exterior - windows on quarters MA 553, 551 and 555. Painting completed at West Entrance on three garages and Seiberts GET NUMBERS. Repainted interior of MA 377, 2A, MA560.

Mt. Holmes

Rafter tails repaired, solar panel flashed, replaced roof sheathing, windows, cabinets,

Lamar

Completed piping in quarters 106. Heaters ordered for quarters 108.
Installed photovoltaic array.
Barn - resingled, completed October 1998.

Lake

Topsoil in from Utah Dorm to new quad. Installed gas main to quad.

UST's

Tank set for 371 and 372 in Mammoth. Installed regulators, meters and earthquake valves.
Removed two fuel oil UST's from South Entrance
MJ123 completed, GV642 completed.
Completed parkwide cathodic protection testing on all fuel dispensing and general tanks performed leak detection testing on all tanks.

Construction Branch

Reviewed A&E proposals for "new" contract.
Firehole River Bridge review with FHWA.
Old Faithful lift station design
Pagoda rehabilitation project/preliminary design.
Design - east wing Bldg. 27
Canyon and Northeast Housing Contracts

Rehabs

MA 96 - installation of new sewer line from the manhole to the house, installed new potable water line.
Started rehab of MA 39
Replaced vinyl and carpets in MA560 and MA567

Bechler

Reroof quarters and office - completed October 1998.

Mammoth

Built accessible bathroom - Mammoth YCC Camp
Replaced garage personnel entry doors
Campground restroom rehabilitation (fee demonstration money).
Installed snow fence on roof of Fleet Maintenance Shop.
Alternate boiler installed at MA #34.
Monitor, locate and repair heating system line links, Soap Suds Row
Rehabilitated back-up boiler, Jail

Misc.

Old Faithful Warming Hut #2 - installed paddle fans, removed benches and railing, cutout for projector, wood stove, installed new wiring, egress lights, circuits for vending machines,
Canyon Rim restroom - installed disconnect
Northeast Entrance - wired shed to be used as an office.
Biannual ground water monitoring at Grebe Pit and Norris Hot Mix.

Boardwalk Crew

Assisted with pothole patching (Dunraven Pass).
Seed picking.
Trail maintenance.
Planted trees at East Entrance
Boardwalk reroutes - Midway Geyser Basin - installed recycled plastic access walk and made it accessible.

FLEET MAINTENANCE

Obliteration of the Turbid Lake Road. During this calendar year three quarters of a mile of this road was rehabilitated. This project was a continuation from 1997 when the project was first started. A main thrust for this project is to improve grizzly bear habitat. The project is a combined effort of the Maintenance Division, Ranger Division, and the Yellowstone Center for Resources. Due to unexpected road failures elsewhere in the park, we were unable to commit resources to this project as planned.

Funding Sources: Fee Demonstration 80%, donations 20%.

** See Photos Next Page **



Buffalo Ranch Road Restoration. Park landscape architects designed the Buffalo Ranch Road Restoration. These project plans called for partial removal of the existing traffic plan and construction of a new gravel parking area. During the fall of 1998 Special Projects Roads began the construction of a new parking area and obliteration of some of the existing road. The parking area was constructed and in use prior to the winter season. Completion of this project was in the spring of 1998 with approximately ¼ of mile of gravel road restored to a natural environment.

Funding Source – Fee Demonstration
Yellowstone Institute funded the materials

Miscellaneous Projects. Completely restored areas that were temporarily used for staging during various road projects. Areas that were used to stage from as follows:

- Soldiers Pit, chip seal
- Madison Road corridor various turn outs, chip seal
- South Entrance corridor
- Heart Lake, Trail Head
- Lewis Lake, boat parking area
- Teton NP, Flagg Ranch
- Fire Hole Bridge, Old Faithful
- Turbid Lake, road obliteration
- Virginia Cascade road repair
- Dam removal, Canyon
- Dunraven paving project
- Lake Maintenance paving project
- Gardiner road paving project
- Geode Creek culvert replacement

Noxious Weed Prevention. Continue on-going gravel pit inspections (outside gravel contracts) with park resource staff to reduce infestation and introduction of noxious weeds. Continued ongoing communication with resources staff and park rangers, implemented verbiage into contracts to reduce noxious weed impacts through county weed programs and heat treatments. Consulted with gravel pit operators on the importance of this program.

Have purchased and installed user friendly tarps on dump trucks within the Special Projects branch, and implemented a cover load policy within the branch. These efforts have been implemented for a couple of reasons; i.e., noxious weed mitigation and public safety.

Gasohol Implementation. Through the Defense Commercial Fuel Contract the park was successful in the implementation of Gasohol (10% ethanol blend w/ unleaded gasoline) parkwide year-round. These actions have been taken as a continuing effort to reduce emissions within the park motor vehicle fleet. There was a case at Old Faithful in which excessive varnish stripped from the underground storage tank. This issue was mitigated through removing the sludge from the bottom of the tank.

Bio-Synthetic 2-cycle oil. Fleet maintenance has continued with the use of Bio-Synthetic 2-cycle oils in the snowmobile and boat fleet. Tests have proven through the use of these oils that emissions have been reduced in the snowmobile fleet.

Continue involvement in the possibilities of implementation of electric powered snowmobiles.

Environmental Friendly Biodegradable Hydraulic Fluids. Yellowstone began using hydraulic oil that is a vegetable oil based lubricant that is environmentally safe and biodegradable. This product was used in seven snow groomers throughout the park. Fleet Maintenance began changing out hydraulic oil in various dump trucks and snow plows as they were repaired.

Boat Engines. Purchased and installed (on 3 boats), the new OMC Ficht 2-cycle technology. These engines are in the 150-225 horse power range and are the new state of the art computerized fuel injected engines that are economical as well as emission efficient by today's standards.

Asphalt Plant. Continuation of dust and emissions reduction at the asphalt plant replaced 100 dust collection bags in the baghouse. Replaced material elevator with a hot elevator that is dust free.

Chip sealed 7 miles of the west road. PASS (Polymerized Asphalt Surface Sealer) oil, which is a rejuvenator supplied by Asphalt Systems, was used on this project. This asphalt oil is fairly new and this was the first time it was used in the park. Cover material used was 3/8" chips.

Funding Source: Fee Demonstration and ONPS - \$143,407.

Chip sealed 21 miles of the South Entrance road. Special Projects also chip sealed 3 miles of the John D. Rockefeller Parkway for Grand Teton National Park using a high float polymerized asphalt.

<u>Special Projects Roads:</u>	Total	\$ 251,812
--------------------------------	-------	------------

Dunraven Pass. Overlaid various deteriorated road sections on Dunraven Pass totaling 4.1 miles (fee demonstration money).	Total	\$163,140
---	-------	-----------

Gardiner Road. Overlaid 1.5 miles of the Gardiner to Mammoth road.

Total	\$69,443
-------	----------

Lake Maintenance Area. Paved the Lake Maintenance area.

Total	\$49,971
-------	----------

Asphalt Production. Asphalt plant operations produced 15,597 tons of various asphalts, used for various paving projects and road maintenance activities.

District Hot Mix Production Costs - \$146,780

UPM Purchase. Purchased 500 tons of UPM (Unique Paving Material), all weather road patching material. This material was distributed to park districts for pothole patching.

Total \$ 37,000

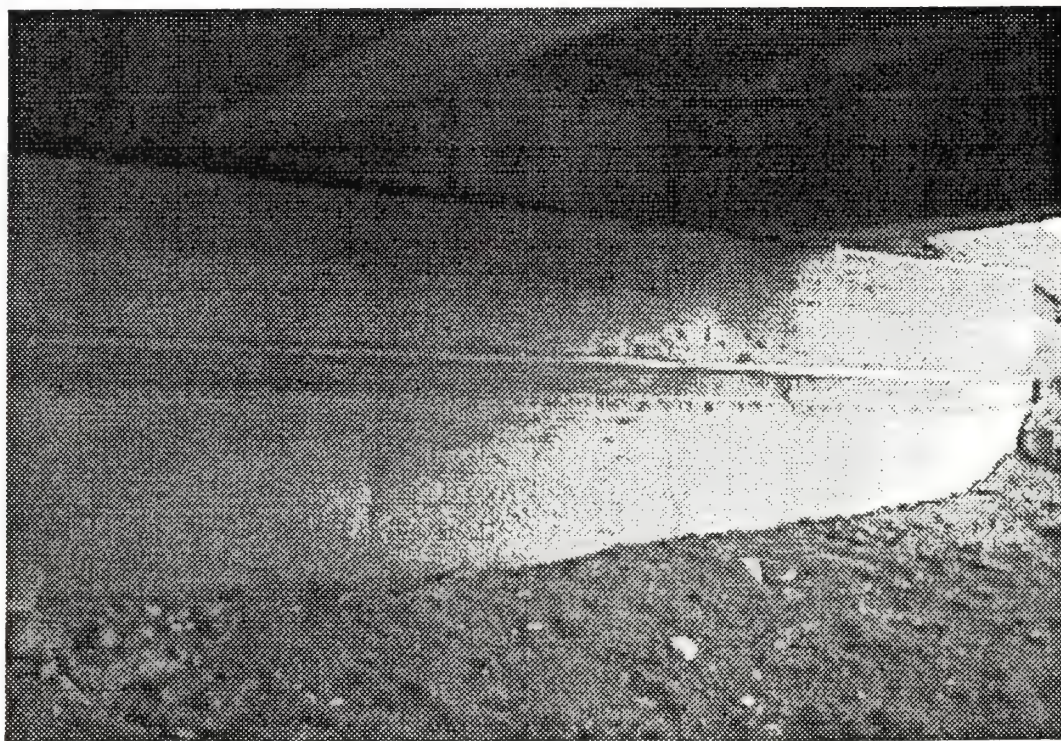
Firehole Bridge. Stabilized and replaced approximately 600 cubic yards of material that eroded from the south east abutment of the high bridge that crosses the Fire Hole river in the Old Faithful district. This project was completed in conjunction with the Old Faithful Maintenance staff.

Total \$ 22,941



Firehole Bridge - Prior to Construction

Firehole Bridge - Old Faithful

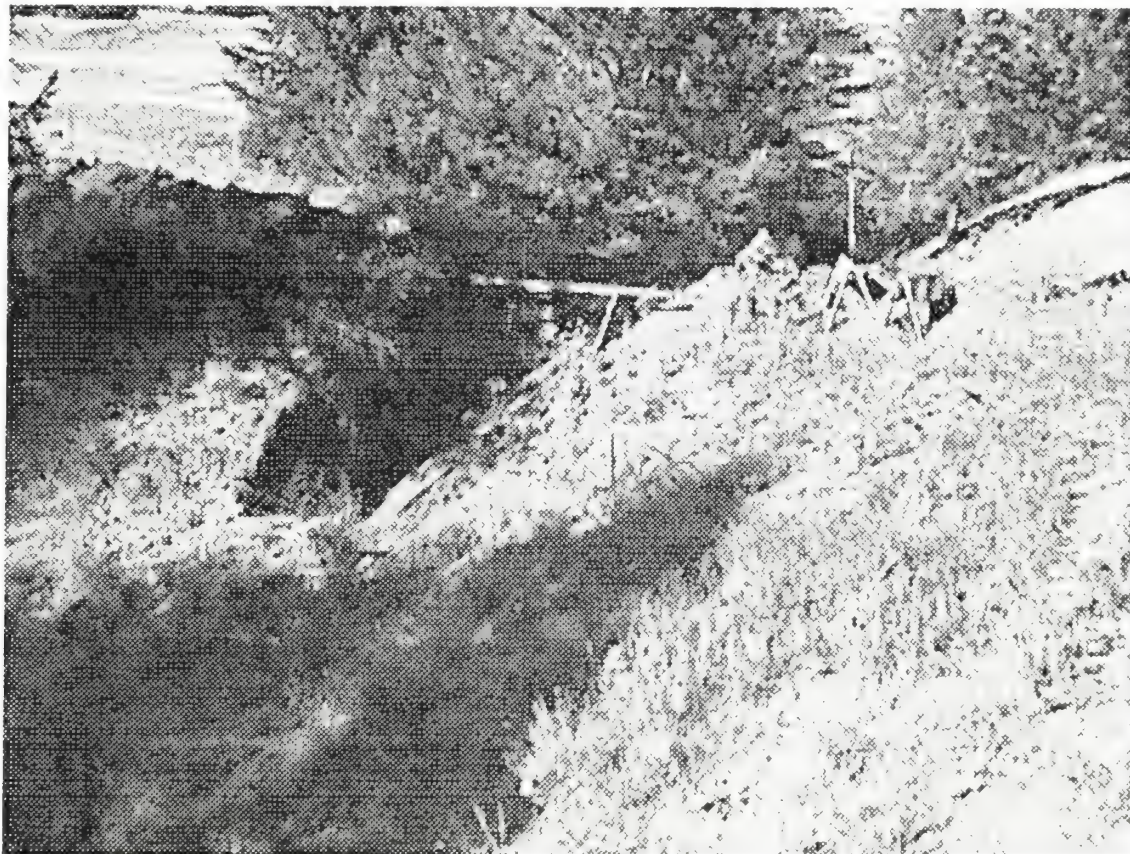


Blacktail Geode Creek. A collapsed culvert in the Geode Creek drainage created extensive erosion and sinkholes in the road corridor, exposing direct burial high voltage power lines. The repairs consisted of excavation of approximately 3,500 cubic yards of fill and replacement of a failed culvert and making sure that the high voltage power lines were secure.

Funding Source: Fee Demonstration

Total

\$ 16,952



Cascade Creek. The Cascade Creek weir, near the Canyon Maintenance area was removed and the site was reclaimed to restore Cascade Creek to pre-facility conditions and allow unimpeded movement of native fish. This consisted of removal of concrete, rebar, and rock material and reshaping the stream bank to natural conditions.

Funding Source: Fee Demonstration

Total

\$ 3,856

District Assists. During the past year, Special Projects assisted the districts with various operations ranging from hauling mix for blade patching, shooting tack oils, moving equipment, loaning of equipment, and manpower. Special Projects also assisted Beartooth Maintenance by running rotaries and plows to keep the Beartooth Highway open after storms. Projects hauled chips for North District and Madison this past fall. Assisted in hand patching the road from Norris to Mammoth. Projects personnel also

helped Fleet Maintenance by making parts runs and assisted in cleaning the maintenance yard and moving annual auction merchandise to the proper position. Trucks hauled sand for the road between Canyon and Lake and hauled 3,814.5 tons of aggregate from the Corwin Springs pit to Norris Hot Plant. Project personnel also assisted Tower and Northeast with spring hand patching this past spring.

Total	\$134,470
-------	-----------

Special projects crews performed 350 miles of spring opening duties, including a portion of the Beartooth Highway. All park roads were open on schedule.

Funding Source: ONPS	Total	\$ 279,982
----------------------	-------	------------

Winter Grooming. Repaired grommets used throughout the park to enhance visitor experience.

Funding Source: ONPS	Total	\$ 46,052
----------------------	-------	-----------

Road Striping. Highway striping contract was awarded to Arrow Striping of Billings, Montana. The upper-loop roads were striped with this contract, providing lane delineation for safe travel.

Funding Source::Fee Demonstration	Total	\$109,886
-----------------------------------	-------	-----------

Virginia Cascades Drive. Virginia Cascades Drive was repaired and re-opened for visitor travel. The road was closed due to extensive shoulder and roadway erosion caused in the spring of 1996. Constructed a dry laid rock retaining wall.

Funding Source: Fee Demonstration - \$50,000

Total

\$42,099



Virginia Cascades - Prior to Construction

Virginia Cascades - Under Construction





Virginia Cascades Drive - Completed



Fleet Maintenance and Special Projects employees attended the following training and workshops this calendar year.

- Seasonal orientation provided by branch supervisors and personnel
- Heavy truck defensive driving MDOT
- Flagger training Wyoming T2 center
- Various tailgate safety meetings
- Motor grader training
- Supervisor Training
- OSHA Compliance Training
- Polaris Snowmobile factory training
- Detroit Diesel Electrical/Rebuild
- On-going tailgate meetings
- Piston Bully groomer training
- Coats tire changing, wheel inspection/inflation
- Miscellaneous computer training
- Impact Visa card training
- John Deere equipment training
- Hunter alignment and OEM adjustments
- Kodiak snow blower

-Job safety Analysis were written for 90% of all work performed

-Continue to perform preventive maintenance, park wide equipment

Fleet Maintenance (Mammoth, Madison, Lake Garages). Various upgrades to shop equipment have been made for a smoother work flow in daily operations including personal safety issues.

Fleet Equipment Purchases

Snowmobiles	(32)	\$166,073
Light vehicles	(40)	\$970,231
Heavy Equipment	(5)	\$390,160

Oil Standardization. We recently performed a study of the different types of lubricants and greases throughout the park and came up with approximately 30 different brands and types. At this time we decided to standardize our oil and lube products by using manufacture's guidelines and military and oil company specifications. With this information and research we developed our own specifications and eliminated 98 percent of the oil and grease products. We now currently use 6 different specifications for the fleet (5-30#, 15-40#, 10#, 30#, 85-90#, and grease). All of the specifications either met or exceeded manufacturer's guidelines. This has resulted in a major cost savings and our capability to meet and exceed manufacturer's recommendations for warranty repairs and the longevity of our fleet. These changes make for ease of operations and alleviates confusion for park employees.

Rotary Rehabilitation. Contracted the rehabilitation of a existing park rotary - \$119,834.
Trails

In 1998 the Yellowstone NPS Trail Crew consisted of one Trails Supervisor, three permanent and two seasonal Trail Crew Leaders, one permanent and two seasonal Animal Packers, eight seasonal maintenance workers, six seasonal laborers, and three full-time Volunteers In The Parks.

The trail crew provided logistical support and technical oversight to 17 crew-weeks of YCC work, six crew-weeks of Aspen Youth Alternatives (AYA) work, one crew-week of Yellowstone Association (YA) work, four crew-weeks of Student Conservation Association (SCA) work, and eight crew-weeks of Montana Conservation Corps (MCC) work.

Noteworthy events for the summer included - - Two \$16,000 Public Land Corps grants (one to fund an 8-person MCC crew for 8 weeks at Delacy Creek, the other to fund a 4-week SCA crew at Fox Creek); moving two trail crews' housing from Lake to the Blister Rust Camp at Canyon; completion of all but 200 miles of the GPS survey of the backcountry trail system; completion of the Trail Maintenance Plan (forwarded to the Superintendent for action); approval of a \$48,000 Yellowstone Foundation grant to fund trail work on Pelican Valley in FY99; formalizing working agreements between the RMVP backcountry rangers and the trail crew.

Trail Crew Projects:

Boiling River	rock retaining wall
Tower Falls	rock walls and drain maintenance
Tower Creek	reroute
Garnet Hill	reroute
Lamar River Stock Trailhead	reroute
Lamar River Hiker Trailhead	began new bridge
Blacktail and Yellowstone River	drain maintenance and rock work
Hellroaring	drain maintenance and bog hardening
Coyote Creek	drain maintenance
Buffalo Plateau	drain maintenance
Warm Creek Pass	drain maintenance and rock walls
Lamar River	spot tread work at Calfee and Cold Creek
Miller Creek	improved creek crossings, spot tread work
	Near 3M4
Pelican Cone	drain maintenance
Turbid Lake Trail	reroute
Mist Creek Pass	drain maintenance
Mystic Falls	drain maintenance and rock work
Little Firehole Meadows	drain maintenance
Fawn Pass	drain maintenance, bog hardening, bog
	bridge
Glen Creek	drain maintenance, erosion control near
	Electric Pass
Daly/Black Butte	drain maintenance

Bechler Meadows Bypass	drain maintenance
Bechler Canyon	drain maintenance
Heart Lake	drain maintenance, reroute, reconstruct
	Short bog bridges
Mountain Creek	drain maintenance
Thorofare Trail	spot bog draining near 9-mile and Columbine
Lewis River Channel	drain maintenance, reroute
Shoshone North Shore	drain maintenance, replaced rotted Bridges, reroutes
Shoshone East Shore	reroute
Grants Pass	drain maintenance, replaced rotted bridge

YCC Projects

Mammoth Terraces (Howard Eaton)	reroute
Golden Gate (HE)	tread widening, brushing
Grizzly Lake Trailhead	repair bridge approach
Pebble Creek	reroute and drain maintenance
Cave Falls	reveg/social trail definition
Bechler River Trail	reveg
Union Falls (Grassy Lake)	drain maintenance
Specimen Creek	bog hardening and drain maintenance
Mallard Lake	reroute
Observation Point	footbridges, eradication of social trails, Drain maintenance
Shoshone Geyser Horse Bypass	drain maintenance, remove rotted

bridges,

	Brushing
Calfee Creek	tread improvement on 1996 route
Mt. Washburn	drain maintenance

Montana Conservation Corps Project (PLC Grant)

Delacy Creek	reroute, harden bogs, build bridges, drainage maintenance
--------------	--

Aspen Youth Alternatives Project

Coyote Creek	reroute
--------------	---------

Student Conservation Association project (PLC Grant)

Snake River Canyon @ Fox Creek	reroute
--------------------------------	---------

Yellowstone Association Project

Ribbon Lake	brushing
-------------	----------

BRANCH OF LANDSCAPE ARCHITECTURE

Design

Work continued on Park Design Standards, should go to print in 1999.

Lamar Institute Cabins: Submitted and obtained 106 SHPO compliance for the Lamar solar panels and revegetated around the solar panel site. A circulation and landscape plan was developed for the cabin area. The old road through the cabin area was obliterated and revegetated.

Gardiner Arch Park: A joint project of YNP staff, Park County, Montana Department of Transportation and Gardiner Chamber of Commerce to produce a design and proposal for Arch Park. The park will have a rustic pavilion housing interpretive panels relating to the area's transportation history. The grant money for this project comes from the Transportation Equity Act.

Madison Amphitheater: staff worked with the park Electric Shop to design Bollard lights that were installed at the amphitheater. Major re-design of the amphitheater was initiated. Site analysis, preliminary design and topographic grading plans were prepared. This is a Fee Demo project.

Slough Creek Campground: Redesign efforts were focused on removing campsites from the annual flood zone. Site analysis and numerous alternatives were produced. Design and siting of an informational kiosk went further and is funded as a Yellowstone Foundation project.

Lighting details and a plan were developed for the parking areas in front-of and in back-of the Old Faithful Inn.

Viewsheds of cultural landscapes in historic districts were photographically documented.

Old Faithful Snow Lodge (OFSL) Seeding, Planting and Mulching

The first phase of the new Snow Lodge was seeded, and mulched with assistance from the Amfac bull crew before the opening of the lodge on July 1. The crews returned in September to implement the planting plan created by the A&E firm. A park special projects crew helped to ball and burlap 118 conifer trees in the Old Faithful area. These were transplanted to the OFSL site with assistance from the Amfac bull crew. Another 200 potted forbs and shrubs (from the Stephen's Creek Nursery) were planted throughout the islands surrounding the lodge. The final revegetation procedure included distributing over 38 pounds of seed over the area. The seed was split into two mixes; a full sun and a partial sun mix. A total of 1.85 acres were seeded, planted and mulched plus snags were distributed around the area to give plants protection from the sun. The second phase will be implemented in 1999.

Turbid Lake Road Reclamation and Revegetation

A staff landscape architect and a natural resource vegetation specialist were on-site to monitor the second phase of removal of the old Turbid Lake roadbed. The heavy equipment crew completed a ½ mile of road by filling in old cuts, removing old fills, and

recontouring the terrain. After completion of earth moving, two Conservation Corps crews under the supervision of a natural resource vegetation specialist spent six days revegetating the disturbed areas. One crew from Montana consisted of six members, and one exchange crew from Washington consisted of seven members. Their duties included raking out equipment tracks; covering exposed soil with mulch and/or natural plant litter, and hand planting native trees and clumps of grass.

Dry Creek Pit and Little Thumb Pit Reclamation and Revegetation

In September a six member Montana Conservation Corps crew spent 6 days under the supervision of a natural resource vegetation specialist and continued revegetation of Dry Creek and Little Thumb Pits. A private contractor under the Wyoming Abandoned Mine Lands project reclaimed the pits in 1997. The 1998 crews planted trees, raked out heavy equipment tracks, knocked down hummocks of earth, and repaired silt fences.

Other Revegetation Projects

- A landscape architect worked with the contractor on grading and topsoil placement at the new Canyon Dunraven Lodge. The landscape crew planted and seeded about four acres of disturbance around the lodge and parking lot.
- Landscape staff assisted with the Blacktail Road, Geode Creek culvert replacement by helping set clearing limits and determine resource protection, fish passage, topsoil salvage and erosion control.
- Seed and trees were distributed around the newly built quads at West Entrance and Tower.
- Thirteen-8 foot aspen trees and 16-4 foot limber pines were planted in the Mammoth campground late fall.
- Seed and plants were distributed on a disturbed area along the bridge across the Firehole river by Old Faithful.
- Seed was sown and trees planted around the Old Faithful Post Office.
- Shrubs and trees were planted around East Entrance housing units.

General Seed Collection

Seed was collected for future revegetation projects throughout the park. For major revegetation projects, seed is collected at least three years in advance. Ongoing and future revegetation projects for which seed was collected for include Turbid Lake road rehabilitation, Old Faithful Snow Lodge, Gardiner, Mammoth, Canyon and West Entrance. The seed was dried, bagged and sent to Bridger Plant Materials Center for cleaning and further production as part of the parkwide seed bank process.

Stephens Creek Nursery

Cuttings were propagated at the Stephens Creek Nursery from road reconstruction projects that will take place in the next three years. 456 cuttings were taken of which 331 were successfully rooted, 20 were planted on phase II of the East road project, while 311 were potted and will be planted when the specific areas are ready for

planting. Cuttings from seven different species were successfully rooted and will be further propagated in the future.

Strawberry plants were also salvaged from the Arnica Creek road segment, Old Faithful Snow Lodge and phase II of the East Entrance road projects. A raised planting bed was built and the strawberries were planted six inches apart in the bed. Thirty-four strawberry plants were salvaged from the Nine Mile trailhead in June and they produced 428 plants that were planted out in October.

The nursery handled over three thousand potted and in-ground plants for the 1998-growing season.

Federal Highway Administration Road Projects (FHWA)

Coordination of Parkwide Federal Lands Highway Program (FLHP) Budget Requests - Six divisions, thirty people and three interagency agreements were involved in budget requests for participation in sixteen different segments of road projects (overlay, 3-R and 4-R). The three million dollar project support budget was coordinated and evaluated by the Chief, Branch of Landscape Architecture, and sent to WASO for approval.

Parkwide Road Project Landscape Coordination - The Chief, Branch of Landscape Architecture, provided parkwide landscape representation on the Road Team with involvement in planning, design, construction, and preparation of overall project coordination. This included involvement on landscape decisions and direction with Rocky Mountain Region, Denver Service Center and Federal Highway Administration personnel

FHWA Road Construction—Project Monitoring

The park provided two landscape architects per construction project. These staff members monitored construction job sites (sometimes 24 hours/day) for resource protection including thermal areas, wetlands, wildlife, vegetation, viewsheds and park features. They gave resource orientations to contractors, acted as the liaison between the Federal Highway engineers and the Park, insured that specifications were met and covered many unforeseen project occurrences for road construction projects on the East Entrance Road, Northeast Entrance Road and on the Madison to Old Faithful road.

East Entrance Road (PRA-YELL 13(7)), Grand Loop Road 10(8)— Design work, including landscape and pullout design, and reviews were completed on this project. HK Contractors were the successful bidder and started cutting clearing limits in the fall. Staff landscape architects' set the clearing limits and monitored the work.

Indian Pond to Lake Butte Overlook, Seg. A (PRA-YELL 13(2)) — This segment was completed, including landscape features, resource protection, construction monitoring, and revegetation (planting and seeding).

Tower Junction to Northeast Entrance (PRA-YELL 12(3)) — The contractor completed a full season of construction activities beginning in May and finishing in mid November.

Failing road base was repaired in 46 locations. This work included excavations of one meter depth, installation of subdrain pipe, backfill with suitable material and temporary asphalt paving. Approximately 50% of the scheduled roadside ditches were cut and seeded. Perforated edge-drain pipe was installed in 25 locations, but topsoiling was not completed for all installations.

Riprap was installed in three locations to protect the road edge from the erosive action of the adjacent Soda Butte Creek. Existing topsoil was re-spread and will be supplemented in 1999. Riprap was also installed to protect several bridge foundations and box culverts from additional scouring. Three energy dissipaters were constructed.

The majority of the scheduled work at the Northeast Entrance station was completed including minor demolition, installation of underground utilities, pouring of new concrete pads around the station and construction of log fencing.

Piles were driven at the sagging historic wall at the east end of Lamar Canyon and a portion of the grout was injected to stabilize the wall. The contractor also began constructing a few of the pullouts on the east end of the project.

Additional significant accomplishments included completing the removal of the aggregate source material from the two obstructed drainage channels. These channels were then shaped to provide a natural appearance. A portion of the removed aggregate was hauled to Frog Rock pit for use by Yellowstone National Park crews in repairing a box culvert on the Blacktail Plateau drive. Excess suitable material from a nearby subexcavation was hauled and placed to repair the portion of the Lamar River Picnic parking area washed out by spring flows. An historic materials pit near the Slough Creek Campground road was rehabilitated. Existing topsoil was stripped, material unsuitable for road construction was used to fill the pit to near it's original grade, topsoil was re-spread, the area was seeded with a native seed mix and shredded bark mulch was applied.

Madison to Biscuit Basin, Seg. B (PRA-YELL 10(11) - This segment was completed on July 1, 1998.

Madison to Norris, Seg. A (PRA-YELL 10(10) - Construction is scheduled to begin September 1999. This segment will include Madison Junction to Gibbon Falls Picnic Area and the realignment section between Gibbon Falls and Tanker Curve.

Design work for this segment is scheduled to be completed by June of 1999. New designs for thi segment include: Terrace Spring parking, Tuff Cliff Picnic Area, Gibbon Falls Picnic Area, and two new picnic areas on the realignment route. The two new picnic areas will be named Secret Valley Overlook and Caldera Rim . Design work for Madison to Norris road segments "B" and "C" is underway.

Arnica Creek (PRA-YELL 10(8) - Design on this segment was completed by June 1998.

Seed Collection for Federal Highways Road Construction Projects

Seed was collected for all road projects ongoing and projects planned up to five years from now. These projects include Fishing Bridge to Indian Pond, Madison to Norris, Tower to Northeast, Bridge Bay to West Thumb, Tower to Canyon, Grant and Sylvan Pass to East Entrance.

The seed was dried, bagged and sent to Bridger Plant Materials Center for cleaning and further production as part of the parkwide seed bank process. Two hundred and seventeen collections were made resulting in 115.59 lbs. of cleaned seed. Twenty-four seed accessions were selected to put into further field production. Cleaned seed was distributed for several other small projects.

FHWA Road Project Revegetation

Four weeks were spent on the second phase of the East Entrance road project planting trees, seeding slopes and planting salvaged plant material from the Stephens Creek Nursery. 709.0625 pounds of seed were spread over 48 acres of cuts, berms and fill slopes along with picnic areas, pullouts and trailheads. 748 potted bareroot and ball-and-burlap shrubs and trees were planted throughout the project.

Three to four people spent three weeks in October on revegetation of the second phase of the Madison to Biscuit road reconstruction project. Two hundred pounds of native seed, in four different mixes, was spread strategically over roadcuts, picnic areas, ditches and road shoulders. One hundred plants from the nursery ranging in size from two to ten feet were planted along roadcuts in areas where the plants had been growing previous.

Madison to Biscuit Basin - One week was spent on revegetation of this project. One hundred salvaged plants and cuttings from the Stephens Creek nursery were planted in highly visible areas along the finished road. Another two hundred and fourteen small trees were transplanted to bare areas along the road. Ten pounds of seed was spread in four areas where minor disturbances had occurred, including thermal basin parking areas, pullouts and trailheads.

FHWA Road Project Seed Collection

A special projects crew of seven people spent five weeks in August and September collecting seed for all road projects ongoing and projects planned up to five years from now. These projects include Fishing Bridge to Lake Butte, Highway 191, Madison to Norris, Tower to Northeast, Tower to Canyon and Arnica Creek to West Thumb.

The seed was dried, bagged and sent to the Natural Resources Conservation Service, Bridger Plant Materials Center for cleaning and further production as part of the parkwide seed bank.

Parkwide Sign Program

The Sign Shop distributed 1,144 signs. This includes wood routed, aluminum baked and ready-made aluminum signs. The computer router was geared up to rout aluminum

backcountry signs. The backcountry design, fonts, spacing, margins and size had to be determined and additional equipment and materials were purchased.

One staff member worked with the ranger committee on a review of parkwide speed limits. Various requests and complaints regarding park signs were addressed.

Resource Teams

Chief, Branch of Landscape Architecture served on the Resource Council, Leadership Quality Team and the 'Greening' Committee. Other members sat on the Research Permit Panel, and the Mammoth and Tower Quality Teams. A parkwide field day was held with the Teton and Glacier National Park landscape architects.

Public Affairs

PERSONNEL

In 1998, the Public Affairs Office staff included Marsha Karle, Chief of Public Affairs (GS-12, PFT), Cheryl Matthews, Assistant Chief of Public Affairs (GS-11, PFT), Stacy Churchwell, Administrative Assistant (GS-07, PFT), and Karen Angermeier, Secretary (GS-05, PSTF). Kara Hartman volunteered in February and Heather Boney worked from March through May in the School to Work Program assisting with our slide files, observing film crews, and providing general clerical assistance. John Quinley, Assistant Regional Director of Communications for the Alaskan Region, cooperated in a job exchange with Marsha Karle from June 4 to July 14, 1998. This exchange allowed John to experience all aspects of Public Affairs from an individual park perspective and allowed Marsha to experience John's position from a regional standpoint. Marsha filled John's position in Anchorage from June 8 to July 17, 1998. Cindy Daly, Public Affairs Specialist from WASO was also in the Public Affairs Office the week of September 21st to learn more on Yellowstone and its issues and gain general park public affairs experience.

BUDGET

The ONPS base for Public Affairs in FY 98 was \$178,700. The Public Affairs Office collected \$69,360 in film permit application and monitoring fees in FY98 (\$24,130 was collected in CY97). This money was used to pay 6 months of Karen Angermeier's salary, portions of Stacy Churchwell's, Cheryl Matthew's, and Marsha Karle's salaries as well as salaries of park staff who assisted with filming and photography projects in the park.

GENERAL INFORMATION SERVICES

The Public Affairs Office serves as a clearinghouse of information for the park, the public, as well as for local, national and international organizations and congressional offices, and responds daily to written, telephone, and walk-in requests for assistance and information.

In addition to numerous responses to a variety of information requests, the Public Affairs Office responded to 22 Freedom of Information requests during 1998.

The Public Affairs Office worked closely with the Regional and Washington Public Affairs Offices, keeping them informed on a variety of matters. Major news item involving Yellowstone included continuing 125th Anniversary events with a ten day symposium sponsored by Montana State University and Yellowstone National Park; wolf restoration; the Fee Demonstration Program and the effects it has had on the park (i.e. public attitude, changes in visitation, and any benefits the park has seen); microbes and the agreement with Diversa; Yellowstone's Northern Range; construction of the new Old Faithful Snow Lodge; Lake Trout; budget; winter use; sewage spills; and the major focus of the year being on the 10 year anniversary of the 1988 fires.

NEWS RELEASES

71 press releases were issued in 1998, including 2 emergency news call-outs, 1 media advisory, and 8 press releases on the MSU/YNP Scientific Conference commemorating Yellowstone's 125th anniversary.

PHOTO/SLIDE REQUESTS

The Public Affairs Office answered 110 requests for the loan of slides and photographs on Yellowstone subjects. These requests came from the general public, production and publishing companies, educational institutions, and the media.

The Public Affairs Office continues to do the film processing for other divisions in the park; approximately 480 orders were processed.

PUBLICATION EDITING REQUESTS

The Public Affairs Office responded to more than 300 written and phone requests for editing publications about Yellowstone. The requests were often time consuming in that they required extensive research in order to provide accurate information for major national and international publications.

FILMING PERMITS

A total of \$69,360 was collected for FY98 (\$24,130 of that was collected in CY98) in application and monitoring fees in 1998.

The Public Affairs Office received over 275 requests from production companies and freelancers for permits to film such things as nature documentaries and product commercials. Of those requests, 70 resulted in the issuance of a filming permit. Extensive time was spent with each of these companies arranging interviews and monitors when necessary, doing research, fact-checking scripts, scouting locations, doing on-site monitoring, processing appropriate billing statements, and tracking application and monitoring fees, and staff time spent on each project. Even in cases where a filming permit was not issued, extensive time was spent on each request explaining park policy, filming procedures, guidelines, and fees.

MEDIA CONTACTS

The Public Affairs Office also responded daily to numerous requests for information and interviews from local, regional, national, and international news media, on various, often controversial issues, such as bison management, visitor use management, fee increases, budget, and the 1988 fires, to name a few. Between Marsha, Cheryl, and Stacy, approximately 200 - 400 interviews were done each month.

Requests for information and interviews on the 10 year anniversary of the 1988 fires totaled over 1000 between print, television and radio media, as well as hundreds of additional requests from the general public, students, and congressional delegations. All major television networks produced segments, as well as several area and local stations,

the Discovery Channel, BBC, Foreign TV, National Geographic, Time, and USA Today to name a few. In addition, Yellowstone staff received numerous requests for slides illustrating the actual fires of 1988, as well as photo points of the aftermath immediately following and ten years after the 1988 fires.

Additionally, special efforts were taken to coordinate media events such as a live satellite feed from Old Faithful regarding the 1988 fires and a special filming project with Walter Cronkite to produce a new film on microbes for the Old Faithful Visitor Center.

CONGRESSIONAL/OFFICIAL AND OTHER VISITORS

Throughout the year the Public Affairs Office assisted with programming and arrangements for United States government dignitaries, park officials, foreign dignitaries, and other guests. A sampling of the visitors follows:

- February - Princess of Thailand, met with Marsha Karle and other key personnel at Old Faithful.
- April - Latin American environmentalists (12) met with Jeanne Johnson at the Albright Visitor Center.
- May - Foreign dignitaries from Russia, Argentina, Italy and Brazil were invited to participate in the MSU/YNP 125th Symposium.
- June - Environmental Leaders from Denmark, Macedonian, Germany, Malta and the UK met with John Varley on various environmental issues such as wolves, fires, lake trout, etc.
- June - Nature Conservancy group from China wanting to start a national park in China. Met with Mike Finley and toured Amfac facilities discussing tourism and marketing.
- August - Croatian group (15) visiting Montana to study cooperative farming and land management techniques, met with Sue Consolo Murphy to discuss predation and land use and general park management.
- September - National Park Service Director Robert Stanton was in Yellowstone and the Grand Teton National Park attending the Yellowstone Park Foundation Board Meeting as well as the quarterly Yellowstone All Employees Meeting.
- September - Chinese Delegation touring six different National Parks to observe integrated conservation and development and balancing economic development with natural resources. They toured the park and met with Sue Consolo Murphy.
- September - Walter Cronkite in the park with Kurtis Productions narrating a new film on microbes for the Old Faithful Visitor Center.

- November - Moroccan Educators (sponsored by the Academy for Educational Development) in the park meeting with Ellen Petrick-Underwood regarding women's roles in environmental issues.

OFFICIAL VISITORS/COUNTRIES

In 1998 the Public Affairs Office assisted with visits by many foreign dignitaries and organizations, including intern, government officials, and park managers. Nineteen organizations were represented from 29 different countries, including Africa, Australia, Bolivia, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Croatia, Denmark, Dominican Republic, Germany, Guatemala, Iceland, Japan, Malta, Mexico, Mongolia, Morocco, Netherlands, Nicaragua, Scotland, Spain, South Africa, Thailand, Turkey, United Kingdom, and Uruguay.

MEETINGS/SPECIAL EVENTS

❖ 125th Anniversary Scientific Conference

Yellowstone continued celebrating it's 125th anniversary (1997) with a scientific symposium sponsored by Montana State University and Yellowstone National Park, commemorating 125 years of the park's influence on scholarly research and creative activities. The symposium ran from May 11-22, 1998.

Vice President Al Gore, Secretary of Interior Bruce Babbitt, governors and U.S. senators and congressmen from the tri-state area were all invited to address the symposium. Foreign dignitaries from Costa Rica, Argentina, South Africa, Russia, and Mongolia spoke along with Yellowstone Superintendent Michael V. Finley and MSU President Michael Malone.

There were four different conferences that included sessions on fire ecology, life in extreme environments, the human role in ecosystems, and the interplay of geology and ecology at Yellowstone. Three workshops discussed the greening of Yellowstone, future biological research and information resources, and links between federal and local governments. The Greater Yellowstone Film Series, an art show, and photographic exhibits rounded out the events.

❖ Canon Press Conference

A media event was scheduled in September announcing a donation of \$110,000 from Canon for continued research on Yellowstone's grizzly bears via Global Positioning System (GPS) collars. These collars are able to track the movements and habits of grizzly bears in the Greater Yellowstone Ecosystem.

❖ Speaking Engagements

- Marsha Karle spoke to a state college public relations group of over 200 people in Jackson, Wyoming regarding the Yellowstone fires and how to deal with emergency situations.
- Marsha Karle spoke with an English/Writing Class at MSU in April to discuss the type of writing we do in the Public Affairs Office.

❖ Other Events/Meetings:

- World Wide Web Committee meetings
- ADP Committee meetings
- Bison ICS - January, February
- Wolf Meeting - January
- Resource Management Workshop - January
- Snowmobile Training - January
- World Heritage Strategy Meeting - Lake Mead - February
- Greening of Yellowstone Meeting - March
- MSU Conference Meetings - March and April
- Montana Governor's Conference in Kalispell - April
- Wyoming Governor's Conference on Tourism - April
- Greater Yellowstone Coalition Annual Meeting - May
- Bison Meeting in Washington D.C. - May
- Arts for the Parks - September
- Concessions Meeting at Old Faithful - September
- Yellowstone Park Foundation Board Meeting - September
- PAO Conference in Denver - October
- EFOIA Meeting in Seattle - November
- Annual Christmas Tree Lighting Ceremony - (400 people) - December

Planning and Compliance

Winter Use Planning

In May 1997, the Fund for Animals and other groups and individuals filed suit in Federal District Court in Washington D.C. over winter use in Yellowstone and Grand Teton National Parks. The court approved a settlement agreement in October that committed the National Park Service to two primary actions: evaluating a temporary closure of a winter road in Yellowstone and preparation of a new winter use plan for both parks.

In November 1997, the document Environmental Assessment - Temporary Closure of a Winter Road, Yellowstone National Park was completed in accordance with the settlement agreement. During the 45-day public comment period, a total of 2,742 letters were received. In January 1998, a Finding of No Significant Impact was signed on the road closure environmental assessment. The decision was to defer a road closure for a three-year period while monitoring and research occurred on bison use of the groomed road system. If a road closure appeared to be useful in order to understand wildlife use of the winter roads, the NPS committed to providing a one-year notice prior to the implementation of any road closure.

On February 18, 1998, the Fund for Animals and other organizations filed a second suit against the National Park Service. The plaintiffs allege that the National Park Service did not have the necessary data to make the decision to defer closing a road segment in the park. In addition, the plaintiffs allege that the unlimited road grooming and the alleged lack of winter use management practices are continuing to harm the plaintiffs' short and long term interests in recreating and in protecting and observing and studying the environment and wildlife within the Park. The court has not yet rendered a decision; however, the court granted intervention status to groups and individuals representing snowmobile and commercial interests and combined the two suits.

Public scoping comments on the Winter Use Plans and Environmental Impact Statement for Yellowstone and Grand Teton National Parks and the John D. Rockefeller, Jr., Memorial Parkway were accepted from April 14, 1998 to July 18, 1998. Scoping brochures were mailed to 6,000 interested parties, and 16 public meetings were held throughout the Greater Yellowstone Area and the states of Idaho, Montana and Wyoming. In addition to local area and regional meetings, national meetings were held in Salt Lake City, Denver, Minneapolis, and Washington D.C. Approximately 2,500 comment letters were received. Issues identified in the scoping process include visitor access and experience, air quality, snowmobile sound levels, the impact of park management actions on local and regional economies, health and safety, and the influence of groomed road surfaces in the park on wildlife migration patterns.

Nine agencies have been granted cooperating agency status in the winter EIS process. The agencies include the U.S. Forest Service, Park and Gallatin County, Montana; Fremont County, Idaho; Teton and Park County Wyoming; as well as the states of

Idaho, Montana and Wyoming. The cooperating agencies have had continued active involvement in the winter use EIS process beginning with the scoping process in May of 1998. On October 14, 15, and 16, 1998, the National Park Service and the cooperating agencies met in Idaho Falls, Idaho to formulate initial concepts for alternatives. Twenty-five participants and approximately 10 observers attended the three-day workshop. The majority of the ideas generated at the workshops were incorporated into draft preliminary alternatives. Similar workshops were held in both Parks during the week of October 26.

Draft preliminary alternatives for the winter use plan are now under internal review by the National Park Service. Once the preferred alternative has been identified the alternatives will be forwarded to the cooperating agencies for review.

Interagency Winter Use Planning

Work continued on the Winter Visitor Use Management: A Multi-Agency Assessment. Interagency team members met with state agency staff in December 1997 to discuss concerns with the draft report. The team met in November 1997 and again in March 1998 to incorporate public and state agency comments and revise the draft report and maps. The final report is on interagency review and is expected to be available spring 1999.

As part of this effort an interagency team of wildlife biologists was requested to assess winter recreational impacts to wildlife. In January 1997 this team identified key issues in the Greater Yellowstone Area and prepared reports on these issues. All reports were combined into an assessment, *The Effects of Winter Recreation on Wildlife: A Literature Review and Assessment*. This assessment is on internal review and having corrections made in the document. It is scheduled to be printed and available in spring 1999.

Winter-Related Research

Research continued during the 1997-1998 and 1998-1999 winters. University of Montana and University of Vermont researchers conducted two social science surveys with 1997-1998 winter visitors. After analyzing this data collected from these surveys, a follow up survey is being completed in the 1998-1999 winter. A three-part socio-economic project was initiated in the 1997-1998 winter as part of the Winter Use Plan and Bison Environmental Impact Statement. Three surveys will be completed as part of this project. These include a winter visitor survey, summer visitor survey, and a national telephone survey. Other projects occurring during these winters are air quality research projects. A variety of funding sources, including the Pew Charitable Trusts, the National Park Service, the snowmobile industry, and the State of Montana funded these projects. Air quality researchers gathered information on snowmobile emissions in a lab setting, emissions deposited into the snowpack and snowmelt runoff, human exposure to emissions, and developing a way to measure emissions from individual machines in the field. An initial field trip occurred with researchers from Michigan Technological University to evaluate development of moguls in the park snow roads.

Surveys were established in 1997-98 from Canyon to Fishing Bridge to monitor bison use of groomed roads. These surveys were continued in the 1998-99 winter and expanded along the Golden Gate to Norris and Norris to Gibbon Falls road segments. Another research project began in the fall of 1998 to study what changes in wildlife use has occurred due to winter recreation since 1979-80 in the Firehole-Madison-Gibbon River corridors. This project is being conducted by Montana State University. Information gained from both these projects will be used in the preparation of the Winter Use Plan/EIS.

Road Improvements

The National Park Service, in partnership with the Federal Highway Administration, is involved in a major reconstruction program for Yellowstone National Park roads. During 1998, planning activities occurred on seven different road segments.

An environmental assessment for the West Thumb to Lake Junction Road was released in April 1998. Seven comments were received on the assessment and a Finding of No Significant Impact was signed in July. A Statement of Findings for Wetlands was prepared with mitigation measures outlined was also signed in July. This 4-R (resurfacing, restoration, rehabilitation, and reconstruction) project was awarded in September.

Planning and design work continued on the Madison to Norris Road in 1998. A traffic analysis study was completed for this road segment in June. An environmental assessment will be completed in 1999, with construction of the first of three phases planned to begin later that year.

Resource data collection for Dunraven Road continued. Planning activities for this road segment have begun and an EA will be completed in 1999. This 4-R project is scheduled for award in 2001.

Initial planning for the Hayden Valley Road segment commenced in 1998 and resource data collection will occur in 1999. This 3-R project will have an Environmental Assessment completed in 2000, with an expected construction award occurring in 2001.

TRANSPORTATION PLANNING

A traffic analysis of the Madison Junction to Norris Junction Road was completed in June 1998. Entitled Transportation Analysis Grand Loop Road from Madison Junction to Norris Junction, the study evaluated traffic volumes, accident data, design speed, parking area capacity and occupancy, traffic flow, bicycle and pedestrian travel, visitor experience, and park operations for this portion of park roads. To better understand the issue of summer crowding and carrying capacity, parking lot inventories at selected areas around the park continued in 1998.

OLD FAITHFUL SEWAGE TREATMENT PLANT REPLACEMENT

A new sewage treatment plant facility at Old Faithful was designed during 1998, and the process of preparing an environmental assessment to assess the impacts of replacing the facility was begun in June 1998. Public scoping for the project was conducted from September to October 1998. The environmental assessment should be available for public release June 1999.

Housing Planning

The Mammoth Housing Plan was revised in 1998 to reflect comments from employees and the public. Completion of the plan was put "on hold" as the Service-wide Housing Needs Assessment began in March 1998. The housing plan will be revised in 1999 or 2000 pending completion of the park-by-park review of housing needs, including a Condition Assessment and Business Plan.

GREENING OF YELLOWSTONE

The Planning Office provided significant staff support for workshop "The Greening of Yellowstone and Beyond: Preserving and Protecting Our Future" that was held in May at Montana State University in Bozeman as part of Yellowstone National Park's 125th Anniversary Symposium. About 150 participants gathered to further greening initiatives in the Greater Yellowstone Area.

As part of the May 1998 Greening workshop, an interagency agreement was signed with the Idaho National Energy and Environmental Laboratory to coordinate projects between the two entities. In July, park staff travelled to Idaho Falls to tour lab facilities and meet with their counterparts, while INEEL staff returned the favor in September with a visit to Yellowstone. In addition, a number of projects, such as research permit tracking, a goethermal features database, an evaluation of the park's electrical distribution system, and review of seismic studies were underway. INEEL staff began also putting together a proposal to evaluate the long-term transportation and energy needs of Yellowstone.

ACCESSIBILITY

With the retirement of Bill Schnieder, the accessibility focus in 1998 was on responding to inquiries and complaints and not on proactively working towards access improvements.

OTHER PROJECTS AND STAFF CHANGES

Resource Management Operations and Visitor Protection

Chief Ranger Rick Obernesser
Assistant Chief Ranger Mona Divine

<u>Budget</u>	<u>FY 96</u>	<u>FY97</u>	<u>FY98</u>
ONPS	\$4,584,000	\$4,727,000	\$5,303,800
Fee Collection	557,000	650,000	1,396,000
Fishing Fees	350,000	325,000	204,000
Fee Demo	-0-	300,000	58,245
TOTAL	\$5,491,000	\$6,002,000	\$6,962,045

<u>Personnel</u>	<u>FY 96</u>	<u>FY97</u>	<u>FY98</u>
# Permanent Employees	87	92	94
# Seasonal Employees	163	156	
170			
# YCC Enrollees	30	30	30
TOTAL # Employees	280	278	294

Retirements

Jim Sweaney, North District Resources Management Coordinator

Transfers to RMO&VP

Rick Obernesser – From Chief Ranger, Cape Cod Nat'l Seashore, to Assistant Chief Ranger, Yellowstone National Park

Transfers Out of RMO&VP

Dan Sholly – Chief Ranger to Chief Ranger at Big Cypress Nat'l Preserve

Mike Murray – Assistant Chief Ranger to Superintendent, Cape Cod Nat'l Seashore

New Hires (from Term Appointments)

Rick Delappe – Old Faithful Patrol

Les Brunton – Gallatin Patrol

Dennis Lojko – Canyon Patrol

Brad Ross – Snake River Patrol

Dave Ross – Grant Village Patrol

Daniel Vandzura – Snake River Backcountry Patrol

New Hires

Linden Schlencker – Communications Operator

Park Visitation

Visitation by Entrance Station	<u>1996</u>	<u>1997</u>	<u>1998</u>
West	1,119,802	1,057,686	1,195,725
South	814,300	813,171	848,633
North	587,661	548,507	561,608
East	316,449	278,244	365,681
Northeast	<u>191,541</u>	<u>205,749</u>	<u>165,435</u>
SUB-TOTAL	3,030,473	2,903,357	3,137,082
U.S. Highway 191	<u>936,341</u>	<u>951,904</u>	<u>954,021</u>
TOTAL	3,966,814	3,855,261	4,091,104

Fee Collection

Entrance Stations	<u>1996</u>	<u>1997</u>	<u>1998</u>
West	\$1,487,648	\$2,702,684	\$3,278,052
South	117,889	122,297	124,225
North	702,758	1,262,484	1,412,710
East	727,972	1,278,964	1,918,645
Northeast	<u>336,539</u>	<u>892,937</u>	<u>589,080</u>
SUB-TOTAL	\$3,372,806	\$6,259,366	\$7,322,712

Other Fees

Campground Fees Collected	\$ 285,319	\$ 467,768	\$ 531,277
Boating SUP Fees Collected	30,330	29,655	31,010
Fishing SUP Fees Collected	<u>662,749</u>	<u>695,300</u>	<u>638,582</u>

TOTAL Fees Collected	\$4,571,654	\$7,452,089	\$8,523,581
----------------------	-------------	-------------	-------------

Yellowstone and Grand Teton National Parks are two of 100 NPS units participating in the Congressionally-authorized Recreation Fee Demonstration Program. In the 1996 Appropriation Bill (Section 315), Congress mandated the Secretary of the Interior to implement a pilot fee program to demonstrate the feasibility of user-generated cost recovery for the operation and maintenance of recreation sites on federal lands. Entrance fees were increased from \$10 to \$20/vehicle on December 20, 1996 (snowmobile fees increased from \$4/person to \$15/snowmobile). Prior to that, entrance

fees for Grand Teton and Yellowstone were last increased in the spring of 1988 – from \$5 to \$10/private, noncommercial vehicle.

Additional funds generated through fee increases are used to accomplish projects parks have been unable to fund through yearly congressional allocations. Funded projects increase the quality of the visitor experience and enhance the protection of park resources. Projects funded include road improvements, enhanced accessibility to park buildings and resources, and campground and amphitheater upgrades. Few complaints concerning fee increases have been received. Most visitors are very supportive as long as additional fees are retained in the park to help protect the park and its facilities.

Visitor Services Office (VSO)

<u>Passes/Permits Issued</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
Golden Eagle Passports	11,199	13,250	14,624
Golden Age Passports	12,202	15,012	16,132
Golden Access Passports	750	700	700
Annual Park Passes	15,848	7,356	8,689
Boat Permits: motorized	1,292	1,262	1,298
Non-motorized 2,211	2,284	2,436	
Fishing Permits	71,225	67,700	70,270
Other Special Use Permits	175	235	185
Park Supplier Permits	682	758	700
Employee Vehicle Permits	3,900	3,900	3,900
Fee Waivers	300	324	400
Incidental Business Permits	131	129	*
* No longer issue – moved to Concessions			
Lost and Found			
Found Items	3,177	3,451	3,531
Lost items Reported	2,033	2,100	2,500
Items Returned to Owner	650	762	850
Items Returned to Finder	260	395	545

Visitor Information (VSO)

Information Calls	23,918	22,359	20,839
Code-a-phone responses mailed	7,990	5,538	4,719

The Visitor Services Office staff inventoried and distributed 35 different park publications such as maps, newspapers, bison and bear warnings, backcountry brochures, and boating permits to 11 campgrounds, 5 entrance stations, and 7 visitor centers. Over 30 tons of brochures, maps, and newspapers were delivered by office staff through the course of the summer. The Visitor Services Office, with the help of the Communications Center and Interpretive staff, coordinated and produced park information mail-out packages.

Communications Center	1996	1997	1998
Identification Notices	181	135	143

Number Located	40	19	36
Percent Located	22%	14%	25%
Criminal History Checks*	1,607	1,727	1,474
* No. Individuals Run	557	563	479
Other Law Enf. Checks	118,861	63,372	57,384
Vehicle Checks	8,961	11,108	13,948
Persons	19,588	8,557	8,298
Locals	24,733	18,745	17,089
NICIC Inquiries	65,579	24,619	25,821
NCIC Entries	4	14	14
APBs	26	27	18
ATLs	33	20	11
Wrecker Requests	206	289	407
Incoming Calls	195,191	153,619	49,496
Calls taken by *CINDI	126,530	119,554	
% of calls taken by *CINDI	65%	77.9%	
Information Packets Mailed	20,300	18,327	23,153
Regular		18,412	17,212
Foreign	1,888	1,115	1,062

Visitor Protection

Employee Certifications	1996	1997	1998
Criminal Investigators	4	4	4
Permanent Commissioned Rangers	48	53	58
Seasonal Commissioned Rangers	71	69	55
County Deputy Sheriff	41	41	44
Deputy U.S. Marshal	2	2	2
SCUBA Certified	5	4	4
Firearms Rangemaster	20	30	27

Law Enforcement	1996	1997	1998
Case Incident Reports	6,308	6,031	5,974
Motor Vehicle Accidents	591	549	518
Part I Offenses		110	181
Part II Offenses	8,527	7,892	8,144
Car Clouts	39	36	39
Verbal Warnings	20,898	19,780	19,980
Violation Notices Issued	4,032	3,839	3,888

Arrests	102	90	97
Court Cases (heard in Yell)	238	245	206
Resource Protection	1996	1997	1998
<u>* = # Violation Notices Issued</u>			
* Preservation of nat. resources	66	37	52
* Snowmachine	85	144	72
* Camping	244	256	222
* Closed Area	167	177	201
* Verbal Warnings for Firearms	875	675	No longer used
* Firearms	41	44	51
* Wildlife/Hunting	11	20	7
Fishermen Contacts	8,311	6,799	8,557
* Fishing	84	106	110
* Swimming/Bathing	56	15	27

Fatalities (Name, Date and Type of Incident)

Broadwell, Anita Ward, 2/3/98, lost control of veh. on icy road at MP 16.5 Hwy. 191
 Wertz, Kevin, 2/3/98, passenger in Broadwell vehicular accident
 Baker, Charles Ray, 6/15/98, cardiac arrest at O.F. Lodge Cafeteria
 Bolan, Barbara K., 7/7/98, head-on collision at Duck Creek
 McAllister, Robert, 8/6/98, cardiac arrest at Mammoth Terrace parking lot
 Heaps, Florence, 9/9/98, head-on collision near West Thumb

<u>Structural Fire</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
Alarms	257	215	272
Fires	11	7	12
Extrication	2	10	9
Hazardous Materials	3	2	1
TOTAL	273	234	294

Yellowstone National Park and Yellowstone Park Lodges (AmFac) jointly established a fire extinguisher maintenance facility. The facility was salvaged from the removal of the Old Faithful Snowlodge and the building was moved to Gardiner and remodeled. This facility and joint effort has greatly enhanced the park's fire extinguisher program. The fire department purchased the new fire fighter 1 and 2 video series, which has provided the latest training material throughout the park. We have upgraded several MSA breathing apparatus to be in compliance with new standards. We have also purchased a new materials safety data sheet computer program to better track hazardous materials throughout the park. We assisted our gateway communities with extrication on motor vehicle accidents and structural fires. We also trained jointly providing fire fighter skills and proficiency training.

1998 Wildland Fire Operations Report

The 1998 wildland fire season was a relatively slow season in Yellowstone National park but active throughout the rest of the United States. Only 13 fires were reported during the 1998 fire season; 11 were declared fire use fires (new terminology for PNF's) and two were declared wildfires and suppressed. The 11 fire use fires burned 109 acres with the Sour Fire burning 105 acres and the two wildfires burned 16 acres with the Rescue Fire burning all 16 acres. The park received significant rainfall during June with Mammoth receiving 4.75" (245% of normal) and the South Entrance receiving 5.50" (220% of normal) which had a direct affect on the fewer than average numbers of fires (30 lightning-caused is the average).

The fire season across the United States was a very active one, especially in Florida and Texas. Yellowstone filled 43 resource orders for firefighters and overhead, sending out 77 personnel to Florida, Texas, Colorado, Montana, other locations in Wyoming and four personnel on three international assignments to Mexico and Canada. The Yellowstone Prescribed Fire Module was also very busy; they were dispatched to 12 incidents from Arizona to Montana, spending two long tours on the Main Salmon Complex. During the 1998 fire season, Yellowstone had four personnel assigned to Type I overhead teams. The Yellowstone wildland fire engine was dispatched to Texas for a 42-day assignment and performed admirably. All Yellowstone personnel performed their assignments well and all received excellent evaluations.

The Fire Management Staff remained active in fire management training with approximately 325 personnel attending wildland fire courses. Courses offered were Basic Firefighter (S-130/190), Chainsaws (S-212), Helicopter Training (S-217), intermediate Fire Behavior (S-290), Fire Behavior Calculations (S-390) and the refresher aviation training and Standards for Survival. Fire Management personnel also assisted in instructing training courses in the South Central Zone, at the Northern Training Center in Missoula, and at the National Fire training Center in Arizona.

Air Operations

1998 was the second year of a three-year contract with Geo-Seis Helicopters of Ft. Collins, Colorado. The contract helicopter was an Aeorspatiale 315b "Lama." The flight rate was \$1,100 per flight hour with a 200-hour guarantee for a contract period of 108 days (June 15 to September 30). A total of 249 hours were flown in an active fire season, with most of the hours flown in support of wildland fire suppression operations outside of the park. Approximately 15 personnel were trained in short-haul operations and one successful operation was conducted rescuing a visitor injured by a grizzly bear. The major helicopter project was flying personnel and supplies to refurbish the Mt. Holmes lookout. There were 40 air medical flights flown in 1998, the same number as were flown in 1997.

<u>Backcountry Management</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
# Backcountry Permits	6,899	6,550	6,839
# Visitor Use Nights	45,743	44,836	45,612
# Stock Use Nights	8,258	7,873	7,078

Backcountry use was up slightly from 1997, primarily because early season conditions were more favorable to backcountry travel.

Backcountry rangers and trail maintenance crews cleared a high number of trees again in 1998. Research shows that most fire-killed trees fall 8-10 years after a fire. The major fire events Yellowstone experienced in 1988 will ensure that a high number of trees will need to be cleared for the next 2-3 years.

An advanced reservation system for backcountry campsites was introduced in 1996. Beginning April 1, visitors can make reservations by mail or in person for a \$15 fee. Reservations are limited to 60% of the campsites in an area. By the end of the 1998 season, 1,422 reservations had been made which produced \$21,330 of revenue for the park's backcountry management program. This reflects an increase of 31% over 1997 levels and 65% over 1996 levels.

Beyond Road's End was reproduced by a donation through Canon Corporation. The brochure provides information on backcountry permits, where and how to make reservations, backcountry regulations, safety, fishing, weather, camping in bear country, and Leave No Trace outdoor ethics.

The Frequent Users Card program, which allows return backcountry visitors to expedite the permit process, continues to be popular with over 700 cards issued in 1998. Several two-hour training sessions were held throughout the park to certify frequent users.

Slough Creek and Shoshone Lake continue to be the most heavily used overnight areas of the park. Slough Creek received 2,559 visitor-use nights, averaging 427 use-nights per site (an increase of 16% over 1996 levels). Shoshone Lake received 5,347 visitor-use nights, averaging 255 use-nights per site (an increase of 11% over 1996 levels).

The draft Backcountry Management Plan was updated and submitted to the Superintendent for approval. A Backcountry Cabin Plan, intended to address health and safety, storage, design, and consistency issues for the park's 38 backcountry cabins and 5 lookouts was drafted and received in-park review. The plan is being updated based on comments received and will be resubmitted in 1999.

Yellowstone participated in the Leave No Trace Outdoor Ethics educational program in 1998 by sending one ranger to a Leave No Trace Stock Masters Course.

<u>Limited Concessions Permits</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
# Concessions Permits	52	51	60
# Comm. Stock Trips Reported	548	541	544
# Cps Transferred/Terminated	0/4	0/1	0/1

In 1997 50 saddle and pack stock outfitters operated in Yellowstone under Concessions Permits. Three of these were llama packers. Over 200 outfitters and guides attended the annual June meetings (one was held at Lake and another at mammoth).

Resource Management Operations

The RMO&VP Division is responsible for developing and implementing the resource Operations Program that fulfills the broad direction outlined in Yellowstone's Resource Management Plan. District Rangers, Sub-District Rangers, and the District Resource Management Coordinators, in cooperation with the division's Resource Management Operations Coordinator, jointly plan and accomplish the program. Resource Operations Program 1998 highlights include:

Exotic Vegetation Management

RMO&VP staff are responsible for preventing, monitoring, and controlling exotic plant infestations. An aggressive inter-divisional effort continued involving 150 park staff and 90 volunteers. Approximately 4,000 acres were surveyed with 90% of control efforts occurring along roadways and in developed areas and 10% in the park's backcountry. Thirty-three species were treated on approximately 2,000 acres. An integrated weed management approach was used including mechanical (59%), chemical (36%), and cultural (5%) controls. The majority of control efforts were directed at 21 priority 1 and 2 species including knapweed, toadflax, thistles, ox-eye daisy, houndstongue, St. Johnswort, and field bindweed. Early detection and eradication efforts continued on leafy spurge, diffuse knapweed, sulfur cinquefoil, and plumeless thistle. Ten weed infestations were monitored to evaluate effectiveness of weed control efforts. Managers were actively involved in several ecosystem weed initiatives including the Upper Madison, upper Gallatin, Henry's Fork, and Jackson Hole Weed Management Areas (WMA). The Greater Yellowstone Coordinating Committee (GYCC) weed managers met at Lake Hotel to increase coordination of weed management in the ecosystem. GYCC funded a cooperative weed mapping effort for federal, county and state agencies within the ecosystem. Other cooperative efforts during 1998 included: obtained a \$7,000 cost-share grant from the National Fish and Wildlife Foundation's "Pulling Together" initiative involving ten partners in the Henry's Fork WMA; cooperated with the state of Wyoming to evaluate remote sensing effectiveness; staff involvement in the Wyoming Dalmation Toadflax Biocontrol Consortium, the Wyoming State Weed Team, and the Montana Noxious Weed Awareness and Education Working Group; and partnered with Monsanto to design a weed control and native vegetation restoration program for the Triangle area near Gardiner, Montana.

Resource Management Workshop

The Twelfth Annual Resource Management Workshop was held January 27-29, 1998. The workshop topic was Ten Years After the Yellowstone Fires: Ecology, Policy and Attitudes. Several visiting and park staff speakers were on the agenda, including: Dr. Bill Romme (Fort Lewis College) on the ecological role of fire, Dr. Conrad Smith (University of Wyoming) on the public's perception of fire, Dr. David Parsons (Aldo Leopold Wilderness Research Institute) on wilderness fire policy, and Mr. Richard Rothermel (retired project leader, Fire Behavior Unit, fire Sciences Lab) on extreme fire behavior. Yellowstone staff speakers included John Mack on bison management, Kerry

Gunther on bear management, Phil Perkins on fire management, and Doug Smith on wold reintroduction.

Fisheries Management

RMO&VP staff emphasized fishing education and regulation enforcement in 1998. Rangers contacted over 10,000 angler checks, issued 110 citations and 422 verbal warnings for fishing violations. Thirty-seven fisheries exit gate surveys were completed at the entrance gates to calibrate and complement the Volunteer Angler Report System.

RMO&VP staff attended public meetings in Gardiner, Bozeman, West Yellowstone, Jackson, Idaho Falls, and Cody to discuss fisheries management and regulations. The Chief Ranger made a presentation on fishing fees at the Fly Fishers Conference in Livingston in October.

Fishing regulations on Yellowstone Lake were updated to encourage more angler catch of exotic lake trout. Fishing season opened June 1 (rather than June 15) and a cutthroat trout catch-and-release regulation was in effect until July 14. Lake area staff conducted 48 roving creel surveys to assess the new fishing regulations and coordinated angler reports for catching lake trout.

Inventory and Monitoring

Staff monitored amphibians in cooperation with Dr. Charles Peterson, Idaho State University, at the South Entrance Pond, Harlequin Lake and the Lake Village area. Dr. Peterson monitored on a monthly basis while park staff filled in on a weekly basis. Data are analyzed and reported by Dr. Peterson.

Staff conducted whitebark pine transects at Avalanche Peak, Pitchstone Plateau, Big Game Ridge, and Two Ocean plateau. These transects were monitored in cooperation with the Bear Management Office and the Interagency Grizzly Bear Study Team. RMO&VP monitored air quality at the National Atmospheric Deposition Program station (NADP) at the Tower Ranger Station including collecting and performing conductivity, pH, and volume measurements on 52 weekly precipitation samples. Staff also participated in four inter-site comparison studies, processed one "blind audit sample," underwent inspection and testing by a USGS contractor, and maintained the air quality station at the Lake Ranger Station, including maintaining the Particulate Monitoring Network (IMPROVE) sampler system, ozone effects sampling, and gaseous pollutant and National Dry Deposition Network (NDDN) program. Staff assisted the USGS with collection of snow samples to access winter road corridor pollutants.

In cooperation with USFS, Northern Region, RMO&VP staff monitored gypsy moth presence park-wide. RMO&VP staff placed and retrieved 94 pheromone traps throughout the park.

Geothermal Management and Physical Resources

RMO&VP staff and volunteers monitored 81 thermal pools and geysers in the upper, middle, and lower geyser basins for vandalism. Coins, cigarette butts, asphalt, sticks, rocks, and nails thrown into the thermal features were removed by hand. Protection of resources and visitor safety in thermal areas was addressed by park staff and the Geyser Observation and Study Association (GOSA). Clean up of thermal features was also conducted in the West thumb, Norris, and Mud Volcano areas. Staff cooperated in

a geothermal mapping effort in Potts Basin. Staff again collected water samples at eleven locations throughout the year as part of a cooperative USGS/NPS program monitoring area geothermal activity. Field RMO&VP staff also monitored water flow in Reese Creek in response to irrigation rights.

Hazard Trees

Hazard tree surveys were conducted in every campground and developed area throughout the park. District staff conducted surveys and removed hazard trees or marked trees for removal in concession land assignment areas. At Madison Campground, over 6,000 trees were surveyed with 100 marked for subsequent removal by AmFac Parks and Resorts. In addition, park staff removed over 30 trees from West District developed areas, roadside picnic areas and pullouts, 20 trees from Norris Campground, and over 200 trees from the Grant village Campground and developed area. Following tree removal at Madison Campground, over 200 trees were hand-planted by RMO&VP staff and volunteers.

Wildlife Management

RMO&VP staff participated in spring carcass surveys on the Firehole River, Norris Geyser Basin, and Heart lake area with the Bear Management Office. Data were forwarded to the Bear Management Office and Interagency Grizzly Bear Study Team for analysis. Field staff at Lake and Grant Village monitored Yellowstone Lake tributaries for cutthroat trout spawning and associated bear activity at Lake, Bridge Bay Campground, and Grant Village Campground. Lake Resources Management staff continued a study in cooperation with the park Bear Management Office and the Interagency Grizzly Bear Study Team to survey select backcountry spawning streams around Yellowstone Lake. This study was designed to determine changes in cutthroat trout spawning activity and associated bear use from previous surveys conducted 10 years ago and to ascertain the number and types of bears using bear spawning streams from DNA analysis of hair samples collected on barb wire corrals. RMO&VP staff performed interpretive talks on bear habitat use and management for park visitors, classrooms, and professional meetings and orientated park employees to the park's bear management program and to living in grizzly bear habitat. Field staff implemented grizzly bear management operations including management of grizzly bears at Lake and Norris and black bears at Tower, Mammoth, and Old Faithful.

Other wildlife management projects completed in 1998 include: managed habituated coyotes, elk, and bison park-wide, conducted integrated pest management programs for bats at Lake Ranger Station, Lake Lodge, Lake Hamilton's Store, Grant Village Camper Services Building, and the Bechler Ranger Station.

Cultural Resources

RMO&VP staff drafted Determinations of Eligibility (DOEs) for 39 historic backcountry cabins, lookouts, and outbuildings. The draft DOEs were forwarded to Regional Office historian Marcy Cuplin for review and completion. One employee attended the American Indian Law class, held at the YCC camp in Mammoth, September 15-18. An Assessment of Effects was completed for installing security cameras at the historic Northeast Entrance Station. Montana SHPO concurred with the NPS recommendation of No Adverse Effect.

Yellowstone Center for Resources

Director - John D. Varley

Deputy Director - Wayne G. Brewster

In 1998 the Yellowstone Center for Resources (YCR) benefited greatly from the park's reallocation of its base operating budget. In previous years the YCR, which had been created in 1993 by combining personnel that were formerly assigned to several of the park's other divisions, relied upon non-recurring funds to pay a significant portion of permanent employees' salary costs in addition to special projects. Although the division's funding level for 1998 was approximately the same as in 1997, the increased base allocation put the YCR's recurring expenses on sound footing, and boosted the ability of the professional resource specialists to focus on accomplishing the monitoring and management activities for which they were primarily responsible. Interested readers may find more detailed information about specific projects in the YCR annual report, on file at the YCR and in the park's Research Library.

BUDGET AND STAFFING

In FY 1998, Yellowstone Center for Resources (YCR) park base funds were authorized at \$2,245,600. Combined with additional funds from other sources, the division's budget supported 44 full-time equivalent (FTE) staff who conducted work in natural and cultural resource management and advanced resource technology. Budget analyst Melissa McAdam reported the budget for the YCR as follows:

NPS	\$ 2,245,600
CRPP	242,100
NRPP	130,500
Fee Demonstration	31,000
Fishing Fees	284,800
Fed. Hwys.	330,800
Other Federal	65,300
Private	37,700
TOTAL	\$ 3,391,800

Administrative support staff processed 106 personnel actions in FY98; 34 contracting actions worth \$960,200, mainly involving five projects (the Yellowstone thermophiles conservation project, bison brucellosis research, Federal Highways-related archeological compliance, the Montana Water Compact, and support of the Greater Yellowstone Area Data Clearinghouse at Montana State University; 736 procurement actions worth approximately \$516,200; 186 travel authorizations; and 1,242 pieces of correspondence—nearly double that done in 1997—for staff throughout the YCR.

Major personnel actions included the end-of-year retirement of Stuart E. "Stu" Coleman, Chief of the Branch of Natural Resources, after more than 11 years in Yellowstone and additional assignments in other park units such as Everglades, Lava Beds, and Great Smoky Mountains. During Stu's tenure the natural resource staff grew from four full-time resource management biologists (including himself) to 15 professionals with expertise in fisheries, mammals, birds, plants, and geology. He contributed significant time and energy to resolution of the New World Mine proposal which, if permitted, would have caused significant changes in the socioeconomic and environmental conditions in and around the northeast entrance to Yellowstone and the affected watersheds.

Cultural resources gained its first permanent full-time archivist, Lee Whittlesey, and an agreement was reached to transfer regional archeologist Dr. Ann Johnson to the Yellowstone payroll half-time in fiscal year 1999 and full-time in 2000. In late 1998, the park hired Dr. Glenn Plumb into a newly established position as Wildlife Section Leader and supervisor of all bird and mammal programs within the Branch of Natural Resources. Plumb's former assignments included work as the Assistant Director of the University of Wyoming/NPS Cooperative Research Unit and as a research biologist at Badlands National Park.

RESOURCE TEAM PROJECTS

Resource teams are convened as appropriate by the park's Resource Council and assigned to specific, defined projects. Resource teams are interdisciplinary and cross-divisional. Resource specialists from the YCR worked on the following resource team projects in 1998:

Bison Management. The NPS, USDA Animal and Plant Health Inspection Service (APHIS), U.S.D.A. Forest Service, and Montana Department of Livestock (DOL) released a draft plan and environmental impact statement (EIS) in June 1998. More than 67,500 responses were received containing 212,249 individual comments on a wide array of aspects in the draft plan. Comments were received by letter, electronic mail, and verbal presentation at 13 public hearings held in cities across the United States. Five American Indian tribal consultations were also held at the park and on tribal lands to discuss alternatives. After the comment period, the NPS began the process of identifying substantive issues and comments on the draft plan for analysis and use in preparing the final plan.

The goal of the adjusted interim bison management plan for the winter of 1998-99 was to provide for a generally stable bison population by reducing the number of bison killed in management actions while preserving Montana's brucellosis class-free status. Hazing bison from outside the park back into Yellowstone's borders was a first action; when hazing became infeasible the preferred action was to capture and ship only seropositive bison to slaughter or to shoot them if capture was unsuccessful. APHIS determined that Montana would not be required to shoot untested low-risk bison (adult males, all yearlings, and calves) in the West Yellowstone area. These plans, combined with mild winter weather conditions, resulted in the DOL shooting only 6 bison (3 adult females and 3 calves) and shipping 5 adult males to slaughter by the end of December 1998.

A three-year project to study bison, funded by the NPS Natural Resource Preservation Program, was completed in 1998. Research emphasized bison ecology; the ecology of the *Brucella* organism in the wild and a risk assessment of its effects on wild ungulates; and testing vaccines for their safety in non-target wildlife species including elk, pronghorn, moose, and bighorn sheep. Another study underway in cooperation with Montana State University aimed to develop methods for conducting aerial surveys that will provide improved bison population estimates. Many of the research projects were completed and final reports submitted. New funding by the U.S. Geological Survey Biological Resources Division was supporting several more multi-year bison research projects including: bison ecology in Hayden Valley; winter use by bison of groomed park roads; statistical analyses of 30 years of bison data collected by biologist Mary Meagher; reproduction and demography of brucellosis-infected bison; genetic analyses of *Brucella* and development of a PCR-based diagnostic system; and an assessment of the risk of brucellosis transmission from bison to elk.

Grizzly Bear Conservation Strategy. Two staff biologists continued to serve on an interagency team working to complete a *Conservation Strategy* to guide the management of grizzly bears and their habitat, if and when the population should be removed from the list of threatened species. In 1998, biological recovery goals were achieved for the first time since 1994. However, as of year's end, the Yellowstone Ecosystem Managers Subcommittee had not reached final consensus on a draft document to release for public comment.

Lake Trout in Yellowstone Lake. Following the discovery of lake trout in late summer 1994, experimental gillnetting and data collection continued. Three different netting strategies were used to net a total of 7,792 lake trout—up from 811 in 1997. Anglers caught another 738 lake trout, bringing the total to 8,530 lake trout caught in 1998. Although the position of Aquatic Resources section leader, vacant since late 1996, was advertised, at year's end it remained unfilled.

Opal Terrace/Executive House. Preliminary monitoring of the Opal Terrace thermal feature showed that the terrace continued to threaten the west and south sides of the historic Executive House in Mammoth.

Measures remained in place to protect the house from the thermal flow, while work continued on documenting the building to Historic American Building Survey (HABS) standards

Research Permitting System. The park's research permit review committee forwarded a number of proposals to the Resource Council with recommendations for revisions and/or approval. New projects included studies on pronghorns and on scavenger use of wolf-killed prey.

Road Reconstruction Planning. Work to inventory resources in association with park road segments and to assess the impacts of road reconstruction continued to occupy large portions of cultural and natural resource specialists' work time

Winter Visitor Use Management. In 1998, YCR staff assisted in production of a final report and newsletter updating interested persons on the winter Visitor Use Management effort being undertaken by Yellowstone and Grand Teton national parks and national forests in greater Yellowstone. Volunteer and staff biologists also assisted in compiling information on the effects of winter use on wildlife resources

Wolf Restoration. The gray wolf population was well on the way to meeting the goal of having at least ten packs that produce pups for three consecutive years in greater Yellowstone. The total population increased from 86 at the end of 1997 to 110-120 wolves at the end of 1998. Six packs bred and produced 44 pups, 36 (81%) of which were known to have survived to year's end. Fifteen wolves died in 1998: five pups, four yearlings, and six adults. Eight mortalities were from natural sources. Human-caused mortality was responsible for the other seven mortalities, including vehicles, control actions, and illegal killings outside the park. Wolves in certain packs continued to be highly visible and popular with park visitors

Yellowstone Heritage and Research Center. Planning continued on a proposed Yellowstone Heritage and Research Center, designed to mitigate deficiencies in the park's museum, library, and archival collections and provide badly needed research laboratory and exhibit space. Park staff estimated need for a building of 35,000-40,000 square feet, and were investigating possible funding sources and construction sites on park land in Mammoth and Gardiner.

Cultural Resources

Branch Chief - Laura Joss

The Branch of Cultural Resources received 21.3% of the Center's budget in FY 1998. Funds that supplemented Yellowstone's base budget came from the Federal Highways program (\$175,200), the NPS cultural resources preservation program (\$242,100), the NPS cultural cyclic maintenance program (\$70,000), the Yellowstone Association (\$25,200), the fee demonstration program (\$19,000) and trails maintenance (\$40,000). These funds were used for archeological inventories and monitoring; inventory and rehabilitation of historic structures; management and conservation of the park archives, library, and museum collection; and planning for the proposed Yellowstone Heritage and Research Center

Archeology. In the park, 6,317 acres were intensively inventoried for archeological resources; 306 new sites were recorded and 28 sites were revisited and documented to current standards. Emergency salvage occurred at three eroding sites on Yellowstone Lake.

Researchers continued to identify the sources of archeological obsidian in the park. Specialists fingerprinted more than 100 new samples in 1998, and were surprised to find that a single geological specimen of relatively poor-quality obsidian from the Park Point area matched both an archeological specimen from the Hayden Valley and a specimen from Big Game Ridge, south of the lake. When lab reports were tallied on 706 individual obsidian artifacts from within the park, Obsidian Cliff dominated ($n=586$, 83%) as the source. Bear Gulch obsidian was represented by 46 (7%), and unknown sources represented 31 specimens (4%)

Also, 43 specimens (6%) were represented by 14 other obsidian sources. The distribution of different obsidian sources in the archeological record varied by time and area.

Ann Johnson, the archeologist stationed in Yellowstone, began working with cooperators to identify the sources of obsidian in secondary deposits or gravel around the park. The number of previously unidentified Yellowstone obsidians was expected to grow considerably. Obsidian sand from Black Sand Basin was characterized by trace-element fingerprint and found to come from another obsidian source whose location is unknown.

Steatite—a soft, easily carved material when freshly quarried—is occasionally found in the park and a number of sources are known from southeast and west of Yellowstone. In 1998, Ann Johnson and Elaine Hale documented a partially completed pot found by a private individual near the Continental Divide northwest of the park. Johnson contributed to the report on the *Systemwide Archeological Inventory Program: Rocky Mountain Cluster Plan*.

In support of work to upgrade roads, the Office of the Wyoming State Archeologist and the Museum of the Rockies (MOR) carried out inventory, testing, and data recovery activities. National Register testing took place at four prehistoric sites. A large camp at Otter Creek along the Yellowstone River produced a radiocarbon date of 2470 ± 50 B.C. on a buried cultural level. A site on Dunraven Pass had a buried level with a large corner-notched point/knife that returned a date of A.D. 20 ± 50 . Work was done at a site on the Northeast Entrance road that contained elk bones. Also, data recovery was carried out at a large campsite on the Gibbon River that has both prehistoric and historic components. Inventory of the road through the Hayden Valley recorded 12 sites (8 new) within the right-of-way. It was interesting that sites in high pedestrian traffic areas still contained artifacts on the surface.

Testing by MOR of a site in the Black Canyon of the Yellowstone River identified five buried campsites separated by sterile overbank deposits. The youngest one was only a few centimeters below the surface. Its identification was exciting because it cannot be more than several hundred years old, and few sites in the park have been identified as dating to this time. Ann Johnson salvaged three hearths/roasting pits at different sites eroding on the Yellowstone Lake shore and recovered a charred lodgepole pine cone, suggesting that there was a lodgepole forest around the site two thousand years ago, as there is today. Dr. Ken Pierce of the USGS interpreted the position of this feature as being on a barrier bar that once stretched from “pump house point”, across the bay in front of where the Lake Hotel now stands. A large cooking feature had two radiocarbon dates: 840 ± 60 B.C. and 1040 ± 70 B.C. The hearth at another site was dated at A.D. 780 ± 50 , and the roasting pit at the third site dated to A.D. 730 ± 60 . These sites were severely damaged by recent high lake levels. It is likely that loss of archeological materials has occurred all around the lake, highlighting the critical need to inventory this area.

Volunteer Lee Snapp continued using the global positioning system (GPS) to very specifically locate the boundaries and features within the Obsidian Cliff National Historic Landmark. The effort was part of a program to complete data collection and entry into the park’s GIS system before lodgepole pine regrowth masked ground features.

In the spring and into the summer of 1998, a seasonal law enforcement ranger funded by Archeological Resources Protection Act (ARPA) monies made many public contacts and wrote three tickets for collecting archeological materials.

Cultural Landscapes. In 1998, a cultural landscape inventory of the Stephens Creek nursery and administrative area was conducted by a contractor. The interpretive division agreed to produce an interpretive panel describing the Fort Yellowstone army cemetery and its importance to the park.

Ethnography. The park reviewed the first draft of the *Ethnographic Overview and Assessment* by Larry Loendorf and Peter Nabokov entitled “Restoring A Presence.” This document included archeological, ethnographic, and historical information about groups who used the area, and made recommendations for

future work with regional tribes. Tribal contacts from Native American groups affiliated with the park were regularly notified regarding projects and issues such as bison management and winter use planning. In addition to fee waivers granted to tribal participants in park activities and meetings, four waivers were approved for tribal members entering the park to conduct traditional or ceremonial activities. In August and September park staff held five government-to-government tribal consultations with more than 80 members from 18 tribes and 4 American Indian organizations, discussing bison management and other issues.

Joseph Weixelman, an ethnohistorian, was hired as a seasonal to conduct a reconnaissance survey of the Bannock Trail across the northern portion of the park which was used by American Indians as long as 10,000 years ago. He located and documented 12 miles of the trail in the Mammoth, Indian Creek, Blacktail Plateau, and Tower areas.

American Indians and Cultural and Natural Resources Management: The Law and Practice Regarding Federal Lands, taught by Dr. Raymond Cross, a Mandan-Hidatsa, from the University of Montana School of Law, was held September 15-18, 1998 at the YCC Camp.

The course provided participants with conceptual and practical fundamentals on American Indian law relating to resources management. Fifteen scholarships helped enable representatives of American Indian tribes to attend along with 52 other interagency participants and five observers.

Historic Structures. Cultural resources staff worked with contractors to complete National Register inventory and evaluation of more than 1,000 historic structures in 1998 by labeling photographs, documenting interiors and exteriors, and reviewing inventory forms for concession structures. The information will be used to help complete a historic resource study for the park. Work began on a guide to assist historic building occupants in the proper maintenance and care of their residences.

History. Christine Whitacre, detailed from the regional office for six weeks as acting park historian, gathered valuable information on the historic use of the Otter Creek area and the significance of the ram pump on Cascade Creek near Canyon. She assisted with the inventory of backcountry cabins and provided compliance for projects associated with the Midway Geyser Bridge and road reconstruction. Whitacre also coordinated the historic structures survey and National Register/National Historic Landmark nomination projects. Seasonal assistant Kara Mills produced a history of the Buffalo Ford Soldier Station near Mud Volcano, which assisted the archeological program.

Library, Archives, and Museum Collections. In 1998 archivist Lee Whittlesey and staff dramatically expanded the master archival inventory from 700 pages to 1,419 pages and made it Internet-accessible via the park's website. They archived and inventoried more than 100 park log books important to the history of Yellowstone, including the Old Faithful Geyser logs and the Norris Geyser Basin, Mount Washburn, Lone Star Geyser, Madison, and Lamar area logs which previously were stored elsewhere.

Staff continued to remove some of the approximately 90,000 images in the historic photograph archive from overcrowded, hazardous, and otherwise substandard storage conditions and place them in archival sleeves and boxes that enabled them to be safely handled and viewed as needed. As part of the park's continuing partnership with the National Gallery of Art (NGA), the curator received slides and prints of each leaf of the two Thomas Moran sketchbooks in the museum collection containing rarely seen and never-published drawings that this year became available for research and educational uses.

The park acquired a number of rare items for the library and museum collection by trade, purchase, or donation, including: W.B. Merriam, *Recollections of My Fifty Years Hunting and Fishing* (autographed by author), 1923; Alfred Lambourn, *Pine Branches and Sea Weeds*, 1889; T.H.G. Esmonde, *Hunting Memories of Many Lands* (autographed by author), 1925; Willis Lee, et al., *Guidebook of the Western U.S.* 1915; T.C.

Porter, *Impressions of America*, 1899; *Illustrated London News*, an 1883 issue which includes a YNP article and woodcuts; three videotapes of the 1930s Yellowstone films of Tim Miller; "Alice's Adventures in the New Wonderland," a rare 1884 Northern Pacific Railroad publication; "An Amazingly Large Collection...of 143" photographs of Henry Bird Calfee (color copies); an 1885 oil painting of Constant Geyser by noted American artist James Everett Stuart, and a series of enlargements of William Henry Jackson photographs coupled with enlargements taken from the same spots by USGS photographers. The latter pairings were turned into an interpretive display for the 125th anniversary symposium at Montana State University.

In 1998, nearly 12,000 negatives in the collection remained only in volatile nitrate form which can spontaneously combust when subjected to the heat of a normal photo enlarger. The museum staff was working with the NPS's Western Archeological and Conservation Center to have Yellowstone's nitrates duplicated onto safety film for improved preservation and access. In another project, ultraviolet film was applied to the exhibit cases and glass doors housing historic natural science specimens at the Fishing Bridge Museum to block harmful UV light, which causes irreversible damage to specimens, and to prevent the delicate glass from shattering should a case or door be damaged. Worn-out gaskets on cases were replaced to deter pests.

Funding provided through the Yellowstone Park Foundation permitted much-needed professional conservation treatment of one of Yellowstone's most significant historic vehicles, an 11-passenger buggy made by Studebaker Brothers. The buggy was used to transport customers of the Livingston-based Shaw & Powell Camping Company, which operated from 1898 to 1916. The buggy—the only Shaw & Powell vehicle in good condition known to exist anywhere in the world—had been stored outside for decades. Because of its rarity and potential for interpreting the way many early middle class visitors chose to see Yellowstone, it was selected to be the first vehicle from the park's collection to receive conservation treatment while preserving as much original material as possible. The buggy was stabilized and missing parts were replaced with compatible materials. All salvageable original parts and indications of the history of its use were preserved. The buggy and related artifacts and photographs were displayed in the Old Faithful Inn lobby.

In fiscal year 1998, 3,592 objects from the disciplines of archeology, history, biology, paleontology, and geology were added to the collection, bringing the total number of museum items to 190,613. During the 1998 field season, 235 specimens were also collected for the Yellowstone herbarium. These were mostly plants not well represented in the collection, new park records, and exotic plants collected to document their arrival and/or spread. Demand for access to the museum collections was very heavy in 1998; more than 700 research and reference requests—20 percent from park staff and 80 percent from outside researchers—were met during the year, reflecting a trend toward greater use of the collection by outside researchers. The greatest demand was for historic images (i.e., photographs, postcards, and stereographs), ephemera (such as historic brochures), and access to the vehicle collection. Use of the herbarium also continued to be heavy, particularly during summer months.

National Historic Preservation Act Compliance. During 1998, branch staff were involved with 136 projects, reviewed 11 satellite dish placement requests, and reviewed 31 other proposed projects for potential effects on National Register-eligible or listed cultural resources. Of 11 projects submitted for section 106 review, 9 were determined to have no adverse effect and 2 were determined to have an adverse effect. The National Historic Preservation Act requires federal agencies to identify, evaluate, and nominate to the National Register suitable historic properties under the jurisdiction or control of the agency. In 1998, the Wyoming State Historic Preservation Office concurred that the Bechler Soldier Station Historic District and the Midway Geyser Basin bridge were eligible to the National Register of Historic Places. Work continued on preparing six National Register nominations associated with the park's road system: the Grand Loop road, East Entrance road, Northeast Entrance road, South Entrance road, North Entrance road, and the West Entrance road. Research began on determinations of eligibility for the Canyon Hotel dump, the Cottage Hotel site, and the Mud Geyser Soldier Station (a.k.a. Buffalo Ford or Nez Perce Soldier Station).

Paleontology. *The Yellowstone Paleontological Survey*, completed by NPS paleontologist Vincent Santucci and printed in 1998, was made available on the World

Wide Web at: www.nature.nps.gov/grd/geology/paleo/index.htm. The report included recommendations related to interpretation, protection, management, and curation of the park's paleontological resources.

During a Yellowstone Institute "Fossils of Yellowstone" class led by Santucci, Yellowstone curator Susan Kraft discovered a new locality containing fossil plant material that may include a new species belonging to the Lauraceae family. A paleobotanist at the Smithsonian Institution was working to identify this leaf material. Other plants found were *Quereuxia angulata*, a floating aquatic plant from the Late Cretaceous/Paleocene, and a second aquatic plant identified as *Isoetites horridus*, which is related to the club mosses. A crushing tooth from a Paleozoic coeliodont (a primitive relative of today's sharks and rays) that lived during the Mississippian period, discovered during Santucci's 1997 work, may represent the only coeliodont known from the unit and was being researched by a student at the South Dakota School of Mines and Technology. A research biologist discovered a partial jaw with intact teeth, tentatively identified as being from a brontothere, a large rhinoceros-like mammal from the Eocene period.

Natural Resources

Branch Chief - Stu Coleman

Natural resources management received 51.3% of the Center's budget in 1998. Base funding included \$710,000 for overall BNR programs and activities, an additional \$221,000 for wolf recovery, and \$196,000 for bison management and planning. Federal Lands Highway Project monies (\$120,100) continued to help support permanent and temporary employees, as significant portions of staff time were spent in resource data collection, data analysis, and report submissions required for the highway rebuilding program. \$39,300 in other federal funds also supported overall natural resources programs. The wolf project received \$37,700 in private contributions. Natural Resource Preservation Program funding provided \$110,700 for the third year of joint Yellowstone-Grand Teton bison/brucellosis studies, \$10,000 to replace inadequate fish screens on Reese Creek, a spawning tributary of the Yellowstone River, and \$9,800 for an evaluation of the park's bear management areas. Fishing fee monies added \$284,800 to the management of aquatic resources.

Air Resources. Mary Hektner continued to represent the park in the Greater Yellowstone Area Clean Air Partnership. The primary focus of the group's efforts was to continue work on an assessment identifying GYA air quality issues and conditions, air pollution sources, and monitoring efforts. The assessment was to also summarize known information, identify monitoring needs, and make recommendations for future management actions.

Bear Management. In 1998, biologist Kerry Gunther and his staff received 1,604 reports of bear sightings and sign in the park. These included 736 observations of grizzly bears, 482 of black bears, and 61 of unidentified species of bear. In addition, there were 202 observations of grizzly bear sign, 55 of black bear sign, and 68 of sign from unidentified species of bear. The first recorded grizzly bear activity of the year was a track observation in the Witch Creek drainage on March 12th. The first recorded black bear activity was a sighting of a bear between Slough Creek and the Yellowstone River bridge on March 22nd. The last recorded black bear activity was a track observation on the Cygnet Lakes trail on October 25th. The last recorded grizzly bear activity was a sighting of a large bear about 1/2-mile southeast of Tower Junction on December 3rd.

There was one known grizzly bear mortality and four known black bear mortalities within the park in 1998. The grizzly bear died of natural causes. Three of the four black bear mortalities were caused by bear-vehicle collisions; the fourth was due to predation by a grizzly bear. There were 72 reports of bear-human confrontations (in which people encountered bears but no one was injured). Grizzly bears were involved in 48 of these confrontations and black bears were involved in 20; the species of bear could not be determined in four confrontations. There were four reported incidents in which bears damaged property but did not obtain human foods. Two of these incidents involved grizzly bears and two involved black bears. There was one grizzly bear-inflicted human injury, and no injuries by black bears or unidentified bears. There were no incidents in which bears were trapped in management actions along roadsides or in developed areas. No bears were captured and removed from the park in 1998.

Grizzly bear population monitoring, done in cooperation with the Interagency Grizzly Bear Study Team, revealed 35 adult females and 70 cubs-of-the-year counted in the ecosystem—another good year for reproduction, supporting the twelve-year trend of an expanding population. There were 13 different females with 23 cubs-of-the-year counted in the park portion of the ecosystem in 1998. The average litter size in the park was 1.9 cubs per litter. Grizzly bear family groups observed included 6 one-cub litters, 4 two-cub litters, and 3 three-cub litters. In 1998, the Yellowstone ecosystem grizzly bear population met all of the three population recovery parameters outlined in the Grizzly Bear Recovery Plan for only the second time (the first was in 1994). Habitat-based recovery criteria and a *Conservation Strategy* outlining how the grizzly bear would be managed after delisting were being developed.

Except for whitebark pine cone production, 1998 was considered a year of average abundance of most high-quality bear foods in the park. Whitebark pine cone production was below average. The number of winter-killed elk and bison carcasses potentially available for bears to scavenge was approximately equal to the long-term average recorded on survey routes from 1992-97. The numbers of spawning cutthroat trout counted in Yellowstone Lake tributaries were similar to the long-term averages (1989-1997) on most streams, except for those in the West Thumb area which were below average. Digging for roots of biscuitroot and pond-weed root (*Potamogeton spp.*) were the most frequently recorded grizzly bear feeding activities during summer.

Papers published on bears by park staff in 1998 included *Bear-inflicted human injuries in Yellowstone National Park, 1970-1994*, by Kerry Gunther and Hopi Hoekstra, and *Fishing Bridge: 25 years of controversy regarding grizzly bear management in Yellowstone National Park*, by Sue Consolo Murphy and Beth Kaeding, both reported in the journal *Ursus*.

Birds. Bird biologist Terry McEneaney added four new species, representing first records for Yellowstone, to the park's bird checklist in 1998: the yellowthroated vireo, Philadelphia vireo, Blackburnian warbler, and tri-colored heron.

Endangered peregrine falcons again did well, as 22 peregrines fledged from 13 eyries in the park; one remote eyrie was not checked. Bald eagles, downlisted to "threatened" in 1995, fledged 15 eaglets from 22 active nests. Ecosystemwide the eagles fledged 83 young from 96 active nests, well above the recovery target of 74 fledglings per year. Two endangered whooping cranes, part of an experimental effort to teach the birds to migrate by following an ultralight aircraft, were translocated from southern Wyoming due to concern by project personnel that the birds had separated and were in poor whooping crane habitat. The two birds summered in the park, along with one sandhill-whooping crane hybrid that was born in a remote corner of the park in 1992.

The greater Yellowstone trumpeter swan population continued to show poor production and recruitment. In the park there were only nine nesting attempts in 1998, and during a fall survey only 20 adults and 3 cygnets were documented. Osprey production was 81 young from 87 nests. Common loons numbered 40 adults, 12 of which made nest attempts and fledged 8 loonlets. Four aerial surveys of the Molly Islands

found that 1998 was surprisingly good for colonial nesting birds: white pelicans raised 295 young, double-crested cormorants 147, California gulls 21, and Caspian terns 3 young.

Other bird surveys completed were: the 12th annual mid-winter bald eagle survey, in which 44 golden and 11 bald eagles were counted in and outside the park to the north, the North American bird migration count, during which 1,550 birds of 91 species were seen on May 19, 1998; three breeding bird surveys; and the annual Christmas bird count, during which observers saw 1,313 individual birds of 41 species, one of which (a northern mockingbird seen just outside park boundaries) was newly recorded.

Management actions included translocating three great horned owlets (followed naturally by their parents) from the Old Faithful housing area. The bird biologist again participated in working groups for peregrine falcons, bald eagles, trumpeter swans, and neotropical migrants. He was elected to the Wyoming Bird Records Committee in 1998, and chaired the same committee for the state of Montana. He participated in the Montana GAP analysis project and the Northern Great Plains steppe experts workshop, was lead author of an article in *Yellowstone Science* on peregrine falcons, and wrote a 1997 *Yellowstone Bird Report*.

Disturbed Lands Reclamation. Reclamation of the old Turbid Lake road continued in 1998. Park and Montana Conservation Corps crews decompacted an additional half mile of the abandoned roadbed to encourage revegetation. They also excavated stream crossings; reshaped road cuts to restore original drainage; and mulched, transplanted, and seeded the area with native plant species. Funds were being sought to complete the project in 1999.

Fish and Aquatic Resources. The estimate of 18,000 Yellowstone cutthroat trout migrating upstream in Clear Creek represented the largest count since 1991. These results were encouraging because a general trend of decreasing upstream migrants had been evident since 1987, with the number of fish counted from 1994 through 1997 representing the lowest spawner counts since 1961. However, the annual estimate still remained well below the stable periods in the 1980s when recovery of the population was potentially met following restrictive management regulations. This low spawner escapement remained unexplained and had implications for the numerous piscivorous mammals and birds which use the spawning migration. Unfortunately, whirling disease was discovered in native Yellowstone cutthroat trout sampled from Yellowstone Lake near Clear Creek late in the year.

Control of invasive lake trout in Yellowstone Lake remained a priority. During 1998, the park significantly increased the catch of lake trout in both numbers and biomass from previous years. Capture efficiency had stabilized from 1996-97 but then increased dramatically when biologists began targeting juvenile fish in deep water during 1998. The ratio of captured cutthroat trout to lake trout also decreased significantly to a low of 0.13:1. From late-May through mid-September 1998, 7,792 lake trout—nearly all captured in Breeze Channel and West Thumb basin—were removed with gill nets. Anglers reported catching another 250 lake trout. Since their discovery in 1994 a total of 9,390 lake trout have been removed from Yellowstone Lake.

Movements of lake trout were determined using ultrasonic telemetry. Twenty-four lake trout were surgically implanted with depth-sensing transmitters and tracked with excellent success from June through October. Under ideal conditions, telemetered fish could be detected at distances up to 5 km. Lake trout traveled long distances during their daily and seasonal movements. Fish released in West Thumb regularly traveled to the vicinity of Dot Island; other fish were detected in Bridge Bay and near Stevenson and Frank Islands. Minimum populations of cutthroat trout and lake trout were estimated using hydroacoustic (sonar) surveys conducted throughout Yellowstone Lake. The cutthroat population (>100 mm in total length) was estimated at 1,736,350 fish \pm 531,320. Twenty-five percent of the cutthroat trout resided in the West

Thumb and Breeze Channel portion of the lake. The minimum population of lake trout was estimated at 10,000 fish.

Seven hundred and fifty-two anglers were interviewed to evaluate the effectiveness of an extended earlier-June fishing season on Yellowstone Lake to encourage angler removal of more lake trout. Those interviewed reported catching 5,852 cutthroat trout and 29 lake trout with 14,000 hours of angling effort. During the same days as the interviews, surveyors counted 1,748 and 524 anglers. Biologists estimated that more than 150,000 cutthroat trout and 730 lake trout were captured lake-wide from June 1 through August 31.

The aquatic resources staff continued with work related to restoration of westslope cutthroat trout, which historically were distributed throughout the Madison and Gallatin river drainages but have been reduced to small headwater populations as a result of habitat loss, overfishing, and competition from non-native fish. In 1998, the objective was to continue removing as many introduced trout as possible from Canyon Creek, a major candidate for native fish restoration. Twelve electrofishing sections established in 1997 were re-sampled from the barrier upstream to a natural falls. From April through September biologists removed nearly 6,500 brown, brook, and rainbow trout. Combined efforts in 1997 and 1998 resulted in the total removal of 11,493 non-native trout. Preliminary surveys revealed that the barrier was not effective in preventing non-native trout from migrating upstream from the Gibbon River. Additional improvements made in 1998 included adding plywood and wire mesh and screening to eliminate any remaining flow and prevent fish from entering the sample reach. Biologists marked nearly 300 fish in June, releasing them below the artificial falls. Electrofishing surveys immediately upstream of the barrier on September 10 failed to locate any known marked fish upstream.

Distribution of fluvial Arctic grayling, a candidate for threatened and endangered species listing, was limited to a few adfluvial (lake-dwelling) populations in Grebe and Wolf lakes, in the historically fishless headwaters of the Gibbon River drainage. Reproducing populations of fluvial grayling were not known to occur within park boundaries in 1998. Objectives were to continue to inventory streams where fluvial grayling might be present while quantifying non-native trout populations in potential reintroduction sites. Qualitative electrofishing surveys revealed a large number of resident brook trout in the Virginia Meadows reach of the Gibbon River. Thirty westslope cutthroat trout were also captured downstream of the patrol cabin on Cougar Creek. No grayling were captured in either sampled stream, including those areas where past experimental grayling reintroductions occurred.

The Volunteer Angler Report (VAR) system was developed in 1973 to monitor parkwide angling. Nearly 3.1 million people visited Yellowstone in 1998. The park issued approximately 71,800 fishing permits, and anglers returned 4,342 usable VAR catch cards (6% of those issued). Parkwide angler use and effort were 232,296 angler fishing days and 604,333 hours spent fishing, respectively. The number of days fished by anglers decreased 3.3 percent from 1997. The amount of fishing effort per day, however, increased by nearly 16,600 hours in 1998. Anglers landed 596,645 fish and creel only 21,535, releasing approximately 96% of all fish landed. The average angler fished 2.5 days, 1.3 different waters/day, and 2.6 hours/day. Nearly 81% of single-day anglers landed one or more fish, and 83% of park anglers reported being satisfied with their overall fishing experience.

Geothermal Resources. The park continued to lack any fulltime geologic expertise, but vacancy announcements were issued in December 1998 for a GS-11 geothermal geologist and a GS-12 geomorphologist. Seasonal and volunteer staff monitored geyser activity as they could, and worked with cooperative researchers to maintain the seismic monitoring network and necessary input to park planning and ground-disturbing projects. Staff and contract workers continued to collect water samples on four major park rivers to monitor levels of chloride flux as an indicator of change in geothermal output. Dr.

Irving Friedman, (U.S. Geological Survey, retired) provided project oversight, data analysis, and interpretation.

Park staff hosted what has become a small annual conference in September to discuss earth science research being conducted in the park. USGS and university scientists and park staff gave presentations on geological, geochemical, geophysical, geothermal, hydrological, and microbial topics.

Integrated Pest Management. The park's IPM coordinator, management biologist Roy Renkin, responded to 22 different pest complaints parkwide during 1998, compared to an average of 25.3 for the years 1995-97. Cases included problems with swallow mites, carpenter ants, and maternal bat colonies in buildings occupied by park visitors and residents. Where possible, structural modifications were used as opposed to removal of birds, insects, or mammals. A survey of bats in the Lake Lodge area revealed only 18 bats in 1998 where more than 500 were found in 1997. Efforts to prevent bats from roosting in parts of the building may have contributed to the lower numbers, though parkwide monitoring showed similarly low numbers of bats, possible due to cooler, wetter summer weather.

Mine-related Issues. Staff monitored progress to complete actions outlined in a 1996 agreement between the United States, Crown Butte Mines, Inc., and the Greater Yellowstone Coalition, which provided for cessation of the permit application process for the proposed New World Mine near Cooke City. Finally in 1998, title to lands and mineral rights previously held by Crown Butte and others was transferred to the United States, with the U.S. Forest Service as landholder and lead agency planning for land reclamation. Park resource management specialist Mary Hektner was invited to attend planning meetings and provide input. She also continued to attend community task force meetings associated with the Mineral Hill gold mine near Jardine, operations of which were suspended in 1996. TVX announced in December 1998 that the mine would be closed beginning in 1999. NPS water resources experts and park staff also continued to explore options for treatment and removal of the McLaren mine tailings, located on Soda Butte Creek upstream from the park's northeast boundary.

Thermophiles. The World Foundation for Environment and Development (WFED), which helped facilitate the pioneering bioprospecting agreement Yellowstone entered into in 1997 with Diversa, Inc., was instrumental in helping produce a film in 1998 on microbes. The film was narrated by Walter Cronkite and a version will be available to show at the Old Faithful Visitor Center as well as in other appropriate forums. Efforts to establish additional bioprospecting agreements with investigators working on thermophiles continued, and the YCR director received numerous inquiries from other NPS units interested in exploring this tool for managing research at their parks.

Ungulates. Park staff shared costs and time with the Northern Yellowstone Cooperative Wildlife Working Group to complete counts of ungulate herds on the northern range. Poor flying conditions prevented completion of an early winter elk count prior to December 31, 1998, but 11,742 elk were counted in January 1999. In a helicopter survey on April 23, 1998, a total of 1,748 mule deer were counted on the northern range, only 24 of which were inside Yellowstone National Park boundaries; however, less than 75 mule deer were seen on average during winter surveys each year since 1990.

Approximately once each month NPS staff conducted aerial surveys of the entire bison population. Based on high counts of 2,478 bison observed in May 1998 and 2,203 seen in December, the parkwide population was estimated at 2,200-2,500 animals. *Bison in Yellowstone: A historical overview*, written by YCR staff Paul Schullery, Wayne Brewster, and John Mack, was published in the proceedings of an International Symposium on Bison Ecology and Management in North America, held at Montana State University in 1998.

A count of pronghorn on April 20, 1998 found 231 animals. Volunteers Jim and Edna Caslick conducted ground surveys for the fourth consecutive year to assess the distribution and possible effects of bison management activities on pronghorn, and produced an article on their pronghorn research for *Yellowstone Science*.

On April 23 and May 4, 1998, helicopter surveys conducted by the Montana Department of Fish, Wildlife and Parks located 134 bighorn sheep, 45 of which were inside the park. The annual ground count, conducted in December, found 67 bighorn (28 rams, 26 ewes, 10 lambs, and 3 unclassified sheep). During 1998 known sheep mortalities included one nearly full-curl ram illegally shot on November 15 near Devil's Slide, just north of the park, and one full-curl ram found dead of unknown causes.

Vegetation. Four species of vascular plants not previously reported as occurring within Yellowstone were documented in 1998. Plains mustard (*Schoenocrambe linifolia* (Nutt.) Green) and lotus milkvetch (*Astragalus lotiflorus* Hook.) were both discovered in the northern part of the park. These native species were presumed to have been a long-term component of Yellowstone's flora that had been overlooked. One stiff goldenrod plant (*Solidago rigida* L. var. *humilis* Porter), presumed to be a casual introduction, was located on the Dunraven Pass road. Also, an established population of exotic meadow buttercup (*Ranunculus acris* L.) was documented in the vicinity of the Bechler Ranger Station.

A portion of the Canon/National Park Foundation "Expedition Into the Parks" grant to Yellowstone was used to acquire an additional "challenge" grant, from the National Fish and Wildlife Foundation "Native Plant Conservation Initiative", to survey and assess Yellowstone sand verbenas. This endemic species, *Abronia ammophila*, has a very restricted distribution along the shoreline of Yellowstone Lake, where a casual census in the early 1990s found less than 1000 plants in the population. Evidence pointed to extirpation of plants from at least a part of the species' historical range. In 1998, surveys were initiated in possible habitat along the entire shore of Yellowstone Lake, Lewis Lake, Delusion Lake, and Riddle Lake, and resulted in the location of three previously unknown sites—all located on sandy areas of the Yellowstone Lake shore. A total of 8,325 sand verbenas were found; less than 5% of the plants were at the three new sites. Transects were established for long-term monitoring.

Vegetation management biologist Roy Renkin worked with the RMOVP division to accomplish objectives for several ongoing programs. He conducted hazard tree surveys and removal in Mammoth and Norris campgrounds and helped repair long-term ungulate-plant exclosures at Stephens Creek. He also assisted the wildland fire management program by teaching courses in fire behavior; providing 34 telephone interviews and 31 field trips or interviews on Yellowstone ten years after the 1988 fires; collaborating with graduate students on fire and vegetation data; rating applicants for fire positions; sampling a post-fire vegetation plot at Cascade Lake; and participating in monitoring of the 13 recorded lightning-caused fires (11 prescribed natural; 2 suppressed) which burned a total of 126 acres in 1998.

Renkin gained pesticide approval for the park and assisted in non-native plant control efforts. In 1998, park workers applied 116.58 pounds of active herbicide ingredient to 478 acres. Control efforts also involved hand-pulling and prescribed fire. Areas treated included a 22-acre site known as "the triangle" between the Roosevelt Arch (at the park's north gate) and the town of Gardiner. The triangle was mapped into identifiable vegetation units using GPS technology, and nine monitoring plots were established to describe vegetative conditions before and after treatment for native plant restoration. The 11 acres dominated by annual exotic plant species were chemically treated to suppress seed development, and areas of accumulated plant skeletons were burned in October 1998 to decrease the exotic seed source and eliminate potential fuel buildup near town. Treatment and monitoring was to continue in 1999.

The vegetation biologist worked with various research cooperators studying plant pests and diseases. He continued analyzing data for a study of elk-aspen-fire relationships and removed four experimental exclosures used during data collection. He re-sampled 15 post-burn aspen seedling plots to determine trends in mortality, ungulate utilization, height growth, and competition with conifer seedlings. The data was being compiled for future submission to a scientific journal.

For the first time since the inception (in 1985) of a computerized Cumulative Effects Model to assess grizzly bear habitat, the greater Yellowstone grizzly bear recovery area was processed through the CEM. Outputs for two primary seasons of bear use (pre-July 15 and post-July 15) were developed to facilitate comparisons of bear habitat with road densities. Data analysis, including overlays of home ranges of female grizzlies with young, was to continue into 1999. The vegetation biologist attended five CEM team

meetings and spent considerable time providing habitat data for research biologists and managers working to complete a draft *Grizzly Bear Conservation Strategy*.

Water Resources. Park employees continued working with NPS Water Resource Division staff to implement the Montana/NPS Reserved Water Rights Compact. Stream flow, pH, and conductivity were again monitored at the gauging station on Soda Butte Creek. Due to the absence of a park hydrologist, monitoring was done by a U.S. Forest Service hydrological technician. The compact requires that Montana notify the NPS of all well permit applications within the Yellowstone Controlled Groundwater area. The state received 19 applications in 1998, and the NPS objected to two on the grounds that the groundwater withdrawal would result in a calculable reduction in the surface flow of a park stream or tributary. The applicant lowered their requested amount of water and the NPS withdrew its objection. The second application was not resolved at the end of calendar year 1998.

The USGS began work on a three-year, in-depth National Water Quality Assessment (NAWQA) of the Yellowstone River basin to evaluate various measures of water quality, sampling bed sediment, fish tissues, surface water samples, and aquatic ecology. A focus of park sampling included Soda Butte Creek, due to recognition that its water quality had been historically affected by upstream mining-related activity.

Wetlands. Mary Hektner and her assistants mapped and described wetlands along the road between Tower and Canyon, as part of the parkwide road reconstruction program, and in the vicinity of the proposed Old Faithful sewage treatment plant. Through an interagency agreement, the U.S. Fish and Wildlife Service (USFWS) completed National Wetland Inventory Maps for the entire park and made the information available in digital format via the park's GIS and the World Wide Web at <http://www.nwi.fws.gov/Welcome.html>. Preparation began on a publication about the park's wetlands, to be co-authored with the USFWS.

Wildlife Surveys and Management. The most notable rare mammal observations reported in 1998 were of mountain goat ($n=10$), wolverine ($n=7$), raccoon ($n=2$), lynx ($n=1$), and fisher ($n=1$). The fisher report was a scat found by an observer that had experience with captive fishers. The scat was collected for DNA analysis to confirm the species identification; laboratory confirmation has not yet been completed.

As part of the park's wildlife health sampling program, two coyotes were tested for rabies in 1998; both results were negative. The carcasses of two other dead coyote pups were collected, necropsied, and diagnosed with parvo-virus infection. One grizzly bear, one black bear, and one mountain lion were collected and necropsied. The 24-year old grizzly appeared to have died due to complications of old age, severely worn teeth, and arthritic joints. The black bear died from wounds inflicted by a grizzly bear. The mountain lion appeared to have died from complications probably related to old age. Also, DNA samples collected from five coyotes, three black bears, three mountain lions, and one antelope were added to the tissue bank.

A total of 88 large mammals were hit and killed by vehicles on park roads in 1998. Elk ($n=32$) and mule deer ($n=24$) were the species most often killed in collisions. Other road-killed mammals included 13 bison, 7 coyotes, 3 black bears, 3 moose, 2 beavers, 2 raccoons, 1 antelope, and 1 wolf. The number of road-kills was significantly lower than the long-term average of 113 road kills per year recorded from 1989-97. The average on all park roads was 0.4 road-kills per mile. U.S. Highway 191, which comprised approximately 7% of the paved roadway in the park, accounted for 31% of the road-killed mammals documented, and the rate was approximately 1.4 road-kills per mile, the highest of any park road. The Norris-to-Canyon and Madison-to-Old Faithful roads also had higher-than-average numbers of road-kills in 1998. Both of these road segments were recently reconstructed and/or resurfaced; however it was unclear if reconstruction and resurfacing contributed to the increase in roadkills on these segments.

In 1998, park personnel immobilized one bull elk that had become entangled in a heavy gauge wire, cut free two bull elk that had become tied together with nylon rope, and euthanized four coyotes that had become conditioned to human foods and were behaving aggressively towards people. Of 126 large mammal wildlife carcasses (including animals that were road-killed, poached, or died of natural or other causes) reported, 43 were moved to carcass disposal sites, 25 were dragged away from the road to locations

safer for both people and other wildlife, 20 were collected and used in other wildlife programs or used for museum or naturalist programs, 19 were not considered a safety problem and were left on site, 9 were collected for feeding captive gray wolves, and 8 were collected whole for use as bear bait. The disposition of two carcasses was not reported. The objectives of moving carcasses to 1) reduce the road hazard to scavengers such as bears, wolves, and coyotes, and 2) to reduce the potential for dangerous wildlife-human confrontations at carcasses appeared to have been met. Kerry Gunther, Mark Biel, and Hilary Robison published *Factors influencing the frequency of road-killed wildlife in Yellowstone National Park*, in proceedings of the International Conference on Wildlife Ecology and Transportation held in Fort Myers, Florida.

Wolf Restoration and Management. Twenty-seven wolves (17 pups, 2 yearlings, and 8 adults) from eight packs were captured in January and March as part of a regular program to monitor wolf population dynamics related to recovery objectives and the scientific and public curiosity about wolf ecology. The individuals captured were large and in very good condition; average weight for male and female pups was 95 and 85 pounds, respectively. The alpha male of the Crystal Creek pack weighed 141 pounds at capture, but an estimated 10–15 pounds of that was meat consumed from a fresh elk kill.

Forty-four pups in ten litters were born to wolves in 1998. Only six packs bred in 1998 compared to nine in 1997. The Chief Joseph, Rose Creek, Druid Peak, and Nez Perce packs each had two litters. The Leopold and Crystal Creek packs also had pups. The Soda Butte, Washakie, and Thorofare packs bred in 1997 but not in 1998 because of the loss of one or both adults. All wolf den sites were monitored from the air, and some were monitored from the ground. Most wolf packs that had bred previously in Yellowstone reused their old den site. All birthing dates were in April. Litter size ranged from 2 to 8 pups, with the average being 5.5. Visitor use in a one-mile radius around the dens of the Rose Creek and Druid Peak packs was prohibited from approximately April 15 to June 30, 1998. A temporary "no stopping" zone was also instituted along the Northeast Entrance road to reduce disturbance of wolves trying to cross near their den. Thirty-six (81%) of the pups known to have been born in 1998 survived to year's end.

Fifteen wolves died in 1998: five pups, four yearlings, and six adults. Eight mortalities were from natural sources, including an avalanche, elk, and interpack conflicts among wolves. Human-caused mortality was responsible for the other seven mortalities, including vehicles, control actions, and illegal killings. Highway 191 in the northwest corner of the park continued to be the location where wolves were most often hit by vehicles.

Wolf packs were intensively monitored for 30 consecutive days during March 1998 and again in November and December to document wolf-prey interactions, wolf predation rates and time-in-attendance, percent consumption of kills by wolves and scavengers, characteristics of prey, and characteristics of kill sites. Project staff detected 109 definite and 121 probable kills made by wolves in 1998, including 198 elk, 7 mule deer, 7 coyotes, 6 pronghorn, 5 bison, 3 moose, 3 unknown prey, and 1 wolf. Packs that resided on the northern winter range averaged an ungulate kill every 2-3 days during March and one kill per 3-4 days during November-December. Wolves fed from their kills for periods ranging from 6-17 hours. Scavengers that visited wolf kills included coyotes, red foxes, grizzly bears, black bears, ravens, magpies, bald eagles, golden eagles, and gray jays.

Three cattle, at least four sheep, and at least one dog were killed by wolves in the GYA during 1998. Four wolves were killed outside the park by federal Wildlife Services agents in control actions related to livestock losses. Defenders of Wildlife paid \$ 500 to compensate livestock producers or pet owners for their losses to wolves.

Wolf project biologists spent considerable time in assisting six graduate students and other collaborative research projects in 1998, results of which should be of benefit to the park and the scientific community. Park staff worked with geneticists and private laboratories using DNA analysis to develop a genealogy for Yellowstone's wolf population. Project personnel also critically reviewed safety protocols and instituted numerous operational changes, which were acknowledged in an award by park managers to the staff biologists. Project activities were detailed in the *Yellowstone Wolf Project, Annual Report 1997*, written by Doug Smith.

In February, the Justice Department filed an appeal of U.S. District Court Judge William Downes' 1997 ruling that the wolf reintroduction program in Yellowstone and central Idaho violated the intent of section 10(j) of the Endangered Species Act, because of the lack of geographic separation between fully protected wolves already existing in Montana and the reintroduction areas in which special rules for wolf management apply. Judge Downes had ordered the removal of reintroduced wolves and their offspring from the Yellowstone and central Idaho experimental population areas, but immediately stayed his order pending appeal. By December 31, 1998, no court date had been set for the Tenth Circuit Court of Appeals to hear the case, and until a final court order is issued, wolves were to be protected and managed just as they had been since the reintroduction began.

Wolves were established in many areas of the park by 1998. The Crystal Creek pack, whose alpha female was the first wolf carried into a temporary acclimation pen when the restoration effort began in 1995, lived in Pelican Valley most of the year. They were regularly seen interacting with grizzly bears to mostly benign outcomes, although the bears tended to "win" when a carcass was in question. In 1998 the Soda Butte pack did not replace their alpha male, who died at Heart Lake in 1997, but the first pup born into the pack dispersed and joined with another wolf to form a new pair south of Yellowstone in Grand Teton National Park. The Rose Creek pack remained the ecosystem's largest, with 22 wolves. Mortalities caused the Washakie and Thorofare packs to essentially disband in 1998, though some of their former pups were surviving and forming new wolf groups in the southern portion of greater Yellowstone. And the Druid Peak pack was likely the most visible group of wolves, easily located by visitors to the Lamar Valley for much of the year. At the end of the year, the wolf population in and around the park was estimated to be 110-120 animals.

OTHER ACTIVITIES

Research Support. During 1998, at least \$5.6 million was spent on research in Yellowstone by the 275 scientific teams working in 1998. Less than ten percent of the total (\$534,000) was reported as funded by the National Park Service. Scientists converged on Yellowstone from 36 states as well as several other countries. Researchers were provided with logistical assistance when possible (i.e., dorm space, and vehicles) and given information about park regulations and policies. Bob Lindstrom vacated the position of Research Coordinator in the spring, and late in the year Ann Deutch assumed those duties. A nationwide web-based procedure for generating the Investigator's Annual Report was field tested in 1998 with great success. Most of the park's researchers submitted their annual reports over the internet. However, the lapse in the research coordinator position contributed to the lack of a printed *Investigators' Annual Report* for Yellowstone in 1998.

Permitted research projects ranged from cutting-edge discoveries about such things as the nature of Earth's first life and the magma (melted rock) a few kilometers under Yellowstone to 4th graders learning about the scientific method for the first time. Wildlife-related research accounted for 25% of the studies underway, microbiological studies 17%, and geological topics 16%. Plants and cultural sciences each accounted for 7% of research studies in progress. Results from research in Yellowstone were published in varied journals, including the *International Journal of Systematic Bacteriology*, the *Wildlife Society Bulletin*, the *Plains Anthropologist*, and U.S. Geological Survey open-file reports. Presentations about Yellowstone were given at scientific conferences sponsored by the Association of American Geographers, the Society of Range Management, and the Lunar and Planetary Science Conference, among many others.

Spatial Analysis. Resource technology received 6% of the YCR funds in 1998, including \$121,100 in base funds, \$33,200 in Federal Highways monies, and \$50,000 in other federal monies. Ann Rodman and other staff from the Spatial Analysis Center (SAC) provided information and support for numerous park projects including: a spatial inventory of more than 1,100 thermal features; creation of an accurate GIS layer of all park buildings; the winter visitor use management and Federal Highways projects; the national wetlands inventory; spatial data layers needed to map and predict growth in naturally ignited and prescribed fires; and research on snow modeling, elk habitat use, thermal studies, caldera modeling, paleobotany, and paleontology. Working with the Division of RMOVP, SAC staff created a demonstration project, used at a

variety of training sessions across the country, showing the utility of GPS and GIS in the park's search-and-rescue operations.

NEW TECHNOLOGIES ADDED IN 1998 INCLUDED UPGRADED WORKSTATIONS WITH MORE RAM AND BETTER GRAPHICS, SEVERAL NEW ESRI PRODUCTS (INTERNET MAP SERVER, SDE, AND TRACKING ANALYST) WHICH ALLOW THE PARK TO SERVE MORE DATA OVER THE INTERNET AND RUN SPECIALIZED ANALYSES ON DATA, AND TWO CD WRITERS. AN IMAGE-COMPRESSING SOFTWARE CALLED MRSID THAT DECREASES THE STORAGE SIZE OF IMAGES WITHOUT LOSING MUCH RESOLUTION WAS OF PARTICULAR HELP IN HANDLING THE MORE THAN 70 GIGABYTES OF DIGITAL ORTHOPHOTO QUARTER QUADRANGLES (DOQQ) IMAGE DATA. YELLOWSTONE ALSO RECEIVED SEVERAL NEW SETS OF IMAGERY OF THE PARK, INCLUDING LANDSAT TM SCENES AND AVIRIS HYPERSPECTRAL IMAGERY. TWO NEW GPS UNITS WERE ADDED, INCLUDING A TRIMBLE GEOEXPLORER II AND A PLGR FROM THE DEPARTMENT OF DEFENSE. CANON, INC. DONATED A DIGITAL VIDEO CAMERA ALONG WITH THE SOFTWARE AND HARDWARE TO READ THE DIGITAL VIDEO ON PARK COMPUTERS.

In 1998, SAC staff continued to add information into the searchable data-set catalog. Nearly 250 data sets from subject areas such as aquatic ecology, archeology, entomology, fire, geothermal systems, history, herpetology, mammalogy, ornithology, paleontology, soil science, water quality, and wildlife management have been identified and described in the database. Development of a database to make relevant resource and infrastructure information more accessible to people involved with project planning, compliance, and implementation also began. The information will include data about historic structures and other important cultural resources; surficial and bedrock geology; soils; wetlands; important natural resources such as threatened, endangered, and rare species and important or delicate habitats; and existing infrastructure (i.e., roads, trails, and buildings). A simple interface was being developed to allow users to query the database; create maps, charts, and reports; and attach photographs, drawings, and other scanned documents that help clarify a resource situation.

Support to Other Park Programs. *YCR staff again spent considerable time disseminating information through presentations to park staff, visitors, V.I.P.s, and outside groups; tours of the archives, library and museum storage areas; interviews to radio stations, newspapers, and film crews; classes for the Yellowstone Institute; and the annual Resource Management Workshop and other employee orientations.*

Resource Information. The quarterly magazine *Yellowstone Science*, in its sixth year of publication, featured articles on varied natural and cultural resources. Donations continued to support about 25 percent of printing costs, the rest of which were paid by a grant from the Yellowstone Association. At the request

of Montana State University, the magazine published a special supplement featuring the program and abstracts from a symposium celebrating the park's 125th anniversary.

Other publications produced included: *Paleontological Resources of Yellowstone National Park*, by Vincent Santucci, the *Yellowstone Wolf Project, Annual Report 1997* by Douglas W. Smith, *The Yellowstone Bird Report*, by Terry McEneaney, and a report on the *Systemwide Archeological Inventory Program: Rocky Mountain Cluster Plan*, by J. A. Truesdale, with contributions by A. Anderson and A. Johnson. Resource information staff worked with the Interagency Grizzly Bear Interpretation and Education Subcommittee and staff from Yellowstone's Interpretive Division to produce a special four-page insert on *Grizzly Bears: On the Road to Recovery in the Greater Yellowstone Ecosystem*, which appeared in newspapers around the ecosystem in January 1998.

The 1997 annual report for the Yellowstone Center for Resources was produced and distributed, as were five issues of *The Buffalo Chip* resource management newsletter. Writer-editors assisted planners with a final report and public newsletter about winter use planning and management, and helped landscape architects with Yellowstone's *Design Standards*. Volunteer writer Mary Ann Franke wrote a special report summarizing research on the effects of the 1998 Yellowstone wildfires, which was sent to three scientists outside the park for review. Staff also spent considerable time continuing to edit and prepare for publication a special color-illustrated *State of the Park Report* for the park superintendent.

